

THE AMERICAN FARMER

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THE FARMER AS A MECHANIC

He Ought to Know Something of Smithing.

BY GEO. T. PETTIT, ONEIDA, KAN.

HERE IS, WE BELIEVE, considerable wisdom in the old and oft-repeated saying, "Every man to his trade." One general line of work is all most men can carry on and secure the very best of work, as a man of his natural faculties and abilities would surely be but he made a specialty of some branch that was in line with his inherent aptitude. We see, in every walk of life, the work of the man or woman who knows how to do a few things just right is more remunerative than that of the person who knows how to do a great many things in a mediocre style. Perhaps

THE TEMPTATION FOR FARMERS to spread themselves over too many lines of work is greater than in any other calling, and yet, as a rule, the successful practical farmer is something of an "all-round" man. Indeed, owing to the necessarily varied character of his work and his comparatively isolated condition, it is necessary that he should not only know how to do several kinds of work, but just when to drop one line and take up another. In asking himself the all-important question

"WILL IT PAY?" and arriving as near as may be at a correct answer, he finds there are on the farm frequent simple jobs of construction or repairing that, while they, strictly speaking, belong to lines followed by tradesmen in town, can, with the aid of suitable tools and the exercise of a little skill, be done on the farm quicker, cheaper and in some cases even better, or at least in a more satisfactory manner, than by calling on the village mechanic, sometimes several miles distant, and with the possibility of having to wait a considerable time before the work can be done.

Most wide-awake American farmers have these tools at hand which enable them to make simple repairs in wood, but did it ever occur to the reader that comparatively little wood now enters into the construction of farming tools, and that wood-working tools will not suffice to repair the

"ALL-STEEL" IMPLEMENT or machine of to-day? We have seen many wooden plow beams and handles broken and repairs made on the farm, while the typical Western plow of to-day is made almost entirely of steel, and they can be had without a particle of wood.

More than once have we broken the old wooden harrow on a snag and with a bit of timber, brace and bits and a few bolts, or with hatchet and nails, repaired the lack. The harrow we now use is "all steel" except the draw-bar.

Many a day have we used a cultivator made almost entirely of wood, and many new parts have we supplied in place of broken or worn-out ones. To-day our cultivator has but eight pieces of wood at all told, while some have only half as many.

Thus we might proceed through nearly every line of modern farm machinery, including the steel harvester and binder, the iron mower, and others. And while metal machinery is, generally speaking,

LESS LIABLE to breakage than the old wooden implement of like construction, it is also much more complicated and delicate, and is by no means exempt from the disability that farm machinery is heir to, as can be abundantly proven by any country blacksmith who at certain seasons is kept busy early and late making all manner of repairs, from tightening a rivet to welding and readjusting a heavy steel bar or plating a broken casing.

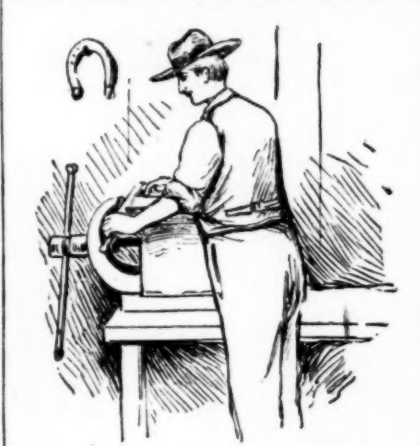
As before stated, many simple jobs of repairing can be profitably done at home, but the farmer must change his tactics to meet the requirements of the changes that have been made in construction. It will not pay him to enter competition with the skilled village smith, neither does it pay him to run to town every time he wants a thread cut on a bolt, a hole drilled, a bent piece straightened, a broken one welded or placed, a horse's feet trimmed, his shoes pulled off, or a hundred other little jobs that with a set of blacksmith's tools such as is offered by the excellent AMERICAN FARMER can be done on the farm at a saving of time and money.

Having in use on our farm a kit of tools exactly like the one referred to, we

write from experience, and can say they are honestly made for business and are ready for honest business at any hour; just such an outfit as the bright farmer or farmer's boy will appreciate and find very convenient to have around.

Last Spring when starting a new cultivator we found the inside shovel shanks too long for the work in hand, with no extra holes by which they could be adjusted. Driving to the barn we slipped a half-inch bit in the drill and quickly boring other holes went back to work, having lost a half hour, whereas without the drill a half day would have been spoiled in going to the shop.

The morning father went out to mow he soon sent the pitman—one of those that fork near the lower end—



LIKE AN EXPERT.

to me with one prong or jaw broken off close to the main shaft. I cut a piece of iron a little longer than the broken jaw, shaped it, drilled a small hole in one end and a corresponding one in the pitman above the break, united the two with a tightly-fitting rivet, letting the free end of new piece with large hole come down to match the unbroken jaw and in a short time the machine was ready to finish the cutting in good shape. At another time the casting which holds the knife-head down was broken. As a new one could not be procured short of St. Joe, we went to work and in half an hour had the old one so well plated that it is good unto this day.

While we could give other similar examples, these will serve to illustrate how and why we found this set of tools

A PROFITABLE INVESTMENT in a single season's use. Very often a tool is permitted to do imperfect work through an entire season because of the trouble and inconvenience of taking it to the shop for repairs or adjustment, when with home facilities the fault would be speedily remedied.

Value of Corn and Cobs Ground Together for Stock Food.

The N. C. Agricultural Experiment Station has issued another bulletin (No. 97) on the digestibility of cattle foods. One of the experiments will be of much value to feeders.

Common dent corn meal was digested and also corn and cob meal from the same lot of corn. The latter was found to have been digested better than was expected. The following is taken from the discussion in the bulletin: "Shelling a 100 pound sample of ear corn gave a yield of 81.5 pounds of kernels and 18.5 pounds of cobs.

"By feeding the cobs as corn-and-cob meal, 7.11 pounds of digestible dry matter was added to the 61.84 pounds digestible from the kernels. This is equivalent to saving 10.31 per cent. of the digestible food in 100 pounds of ear corn. Or, calculated on shelled corn, it adds 9.84 pounds of digestible food in the cobs to the 75.88 pounds in 100 pounds of corn meal. This is an addition of 12.96 per cent. to the digestible dry matter in the corn meal." Who would not try to save 10 per cent. of the corn crop as it is cured in the ear, or add one eighth to the value of the shelled corn meal? This is what these figures mean to make the corn crop go 13 per cent. further than if shelled and fed as meal, and throwing away the cobs.

The Maine Experiment Station has also shown that nearly 5 pounds more of the corn in a bushel is saved by feeding meal than by feeding whole corn. That is about one eleventh, or about enough to pay for grinding. It should cost no more to grind cobs with corn than for corn alone, and even less than for cobs would be net, and the percentage shown by this digestion experiment would prove a handsome profit for the trouble.—F. E. EMEY, Agriculturist, N. C. Experiment Station.

The man who keeps on year after year raising good, salable animals—hogs, sheep, cattle and horses—regardless of fluctuations in the market, will get good prices oftener than he misses them.

SOMETHING SWEET.

Sorghum Sirup—How to Make a Superfine Article.

BY G. H. TURNER, BURGESS, MISS.

FOR OVER 20 YEARS we have been in the habit of raising a sufficiency of sorghum for home consumption. We have raised it for the sirup, of which we obtain from 100 to 200 gallons per acre; for the seed, of which we obtain quantum sufficient to keep our poultry up to the "laying point" the year round; and for the forage, with which we feed our cattle during the winter, or as long as it lasts; even the "bagasse" is used to stop washes and fill gullies and in working the roads.

We regard a sorghum crop as the most profitable crop we raise, if not the most profitable crop that can be raised on the ordinary farm. For the past three weeks we have been actively engaged in sirup-making, have still six or eight weeks steady work ahead, and thinking a few "dots" on the "how" and the "why" and the "wherefore" of the *modus operandi* of sirup-making might help the amateur sirup-maker, as well as some of those who have a crop to "work-up," we throw out a few hints which we have learned from experience (and paid high for) on the same.

Our experience has been with portable mills exclusively. Too often we come across sorry samples of sirup and sorry sirup-makers—men who believe in "luck" instead of management, and with whom the making of a really first-class article of sirup is mere "chance" work, and is the exception rather than the rule. As there are 1,095 meal-times in a year, at all of which sirup in some form is quite a "standard" article and takes its regular place, it is with feelings of dissatisfaction and oftentimes of mortification that a sorry, indifferent and decidedly inferior article usurps the place of that which might have been and should have been a strictly first-class article.

There is a difference (in regard to quality of sirup made) in (1) varieties of cane, and (2) land on which it is grown; black lands invariably making a dark sirup, while mulatto clays, buckshot and whitish or pipe clay soils make an article that is "hard to beat" in both taste and appearance, fully equal to the very best of refined sirup and vastly superior to any of the "glucose" sirups on the market. The making of a really good article of sirup (leaving out "darkness" or "brightness" of product) rests not on "chance" or "peradventure" but wholly and solely on the degree of knowledge, ability and skill of the sirup-maker. Sorghum sirup (at its best) should be of a pale, rich, golden-yellow color, or at most a reddish-yellow; never darker than this. It should be thick enough to "rope" in warm

weather, and yet thin enough to run from your face; and (4) by the "color" of the product.

Never allow raw or partially-cooked juice to be mixed with the finished product in order to prevent "scorching" or even a "burn-up," or the resulting product will be a lumpy, jelly-like mass that is hardly fit for a hog to eat. All that is necessary to prevent having scorched, burned and consequently "dark" sirup with a hard, biting flavor, is a close attention to business, with plenty of juice behind you and more in the tank. Never allow juice, either in the mill, tank or evaporator, to "sour." Never grind out the juice long before it is evaporated, or it will sour (12 hours is amply sufficient time to turn a sweet juice to a sharp, sour "beer"), necessitating the addition of lime or soda in quantity sufficient to neutralize the acid.

In spite of all the care that may be

exercised in straining the juice, there is still a sediment settles on the bottom of the evaporators. To prevent this adhering to and baking on the bottom of the pan, thereby giving to the sirup a "scorched" flavor, if not causing an actual "burn-up," the bottom of the pan should be repeatedly and thoroughly scraped with the edge of the skimmer, or rubbed with a wooden rake or scraper; more especially is this necessary just previous to and during a run. All vessels, receptacles and implements used in the holding of the juice and in the manufacture of the sirup should be kept

SCRUPULOUSLY CLEAN;

even the sirup-maker himself may wear fine clothes and a snow-white "staked and ridged" shirt without getting them badly soiled, and yet bestir himself sufficiently to turn out a superfine article of sirup. Never cut the cane until it is ripe, which may be known by the color of the cane and ripeness of the head, and let the period of time that elapses between the stripping, topping and cutting of the cane and its manufacture into sirup be as short as possible. Never permit the blades to become frost-bitten before they are stripped off; but if Jack Frost should steal on you unawares, then strip the blades off immediately, before the sun has time to wilt them. Frost-bitten cane and the sirup made from it is a little worse than none. In the making of an absolutely perfect article of sirup a great deal depends on (1) the degree of ripeness of the cane; (2) the kind of land on which it is grown; (3) variety of cane; (4) time it is allowed to stay on the pan; (5) the fireman; (6) and more than all, the sirup manufacturer.

Maple Sugar Growers Protest.

The licensed maple sugar producers in Vermont will unite to institute a suit against the United States Government for the earned bounties on the crops of 1894, the payment of which has been refused by the Secretary of the Treasury. The suit will be brought before the United States Court of Claims. The licensed sugar producers of Vermont for the season of 1894 numbered upward of 40,000. From March 1 to May 1, 1894, more than 4,500,000 pounds of maple sugar produced by licensed makers were received and underwent the polariscopic test at the Government laboratory. Fully 90 per cent. of the sugar produced this season under the McKinley act passed inspection above the 80 per cent. requirement, which made about 4,000,000 pounds entitled to receive the bounty of 1 1/2 cents per pound, the product of something like 3,500 makers. The amount of claims involved exceeds \$60,000.

This action is to be taken on the advice of ex-Senator George F. Edmunds, who says: "The refusal of the Secretary of the Treasury to pay the bounty to licensed producers on the crop of 1894, which was accepted and tested by the Government, cannot be justified in law or equity."

Corn Smut.

The smut of corn is not only injurious to the plant, but it is a deadly poison to animals that may eat it with the fodder or the diseased ears. This fungus is closely related to the ergot which infests various grains and grasses and the effect of which is to cause gangrene of the extremities, as the tail and feet, of animals. Some years ago the corn in Kansas being much infested with this parasite, the cattle fed in the stalk fields became largely affected by this disease, and reports to the effect that it was the epizootic aptha, which is one of the most destructive of all animal diseases, were current. Fortunately, it was only the eating of this poisonous fungus that produced the trouble among the cattle, but thousands of them died miserably from starvation and the distress occasioned by the entire loss of the feed.

It is quite possible to eradicate this pestilent fungus. If the diseased stalks and ears are gathered and burned, it will be only a question of time when the plant will be free from it. But, as with similar diseases of crops, it is necessary that all shall concur in this work, for one plant left will mature millions of seeds that are carried far and wide by the wind, and thus infect the soil again.

Care of the Meadows.

It will pay well to run the mower over the meadows and cut down the weeds before they seed. There are daisies, ragweed, goldenrod, and other flowers that are not in their proper place among the grass, and all now maturing seed for seven years' weeding in the future, as the proverb goes. These should be destroyed at once, and it will be a small job to do it.

"BELLOWS TO MEND."

Heavy or Broken-winded Horses.

EDITOR AMERICAN FARMER: This is immediately recognizable by the manner of breathing. The inspiration is performed in somewhat less than the natural time, and with an increased degree of labor; but the expiration has a peculiar difficulty accompanying it. It is accomplished by a double effort, in the first of which, as Mr. Blaine has well explained it, the "usual muscles operate, and in the other the auxiliary muscles, particularly the abdominal, are put on the stretch to complete the expulsion more perfectly; and that being done, the flank falls, or the abdominal

muscles relax with a kind of jerk or spasm." This is attributable to an emphysematous state of the lungs. The inner membrane of the bronchial tubes swell and partly obstruct them. The powerful muscles of inspiration, however, overcome that obstruction and fill the cells of the lungs with air. But there are no such muscles to aid expiration to force the air out again. It is left chiefly to the elasticity of the parts sufficient when the bronchial tubes are in their ordinary unobstructed condition, but not sufficient when they are so obstructed as to require considerable force to press the air through them. Accordingly the air remains imprisoned in the cells, and every succeeding inspiration introduces more air into them until they are ruptured, or the dilated condition becomes permanent. Broken-wind is preceded or accompanied by cough—a cough perfectly characteristic, and by which horsemen would, in the dark, detect the existence of the disease. It is short—seemingly cut-short grunting, and followed by wheezing. When the animal is suddenly struck or threatened, there is a low grunt of the same nature as that of roaring, but not so loud.

Broken-wind is usually preceded by cough; the cough becomes chronic, leads to thick-wind, and then there is but a step to broken-wind. It is the consequence of the cough which accompanies catarrh or bronchitis often that attend or follow pneumonia; and of inflammation, and probably, thickening of the membrane of the bronchial, rather than of congestion of the air cells. A troublesome cough, and sometimes of long continuance, is the foundation of the disease, or indicates that irritable state of the bronchial membrane with which broken-wind is almost necessarily associated. Horses that are greedy feeders, or devour large quantities of slightly-nutritious food, or are worked with a stomach distended by this food, are very subject to broken-wind. More depends upon the management of the food and exercise than is generally supposed. The post horse, the coach horse and the racer are, comparatively, seldom broken-winded. They are fed at stated periods on nutritious food that lies in little compass, and their hours of feeding and of exertion are so arranged that they seldom work on a full stomach. The agricultural horse is too often fed on the very refuse of the farm, and his hours of work are frequently irregular; and the carriage horse, although fed on more nutritious food, is often summoned to work by his capricious master the moment his meal is devoured. A rapid gallop on a full stomach has often produced broken-wind; but generally, probably, there has been some gradual preparation for the result. There has been chronic cough, more than usually disturbed respiration after exercise, etc. Galloping after drinking has been censured as a cause of broken-wind, but it is not half so dangerous as galloping with a stomach distended with food.

It is said that broken-winded horses

are foul feeders, because they devour almost everything that comes in their way; and thus impede the play of the lungs; but there is so much sympathy between the respiratory and digestive systems, that one cannot be much deranged without the other evidently suffering. Flatulence and a depraved appetite may be the consequence as well as the cause of broken-wind, and there is no pathological fact of more frequent occurrence than the coexistence of indigestion and flatulence with broken-wind. The narrow-chested horse is more subject to broken-wind than the broader and deeper-chested one, for there is not so much room for the lungs to expand when rapid progression requires the full discharge of their functions.

Is broken-wind hereditary? We believe so. It may be referred to hereditary conformation—to a narrower chest and

Stinking Smut.

The Michigan Experiment Station has given out a sure cure for stinking smut. The treatment consists in soaking the seed wheat affected with bunt, or stinking smut, in a saturated solution of lime for 24 hours and then sowing as soon as possible. The seed should be thoroughly cleaned through a fanning mill before treatment. To make the solution, take 10 pounds of unslacked lime for each barrel of solution and slake it, using just enough water to make a thick, pasty mass. Add enough water to this to make 32 gallons. The wheat should be poured in and allowed to stand 24 hours. On removal, it must be spread out thin to dry. This may be hastened by throwing on slaked lime and mixing. The wheat should not be allowed to heat, especially when wet. Use more wheat to the acre than usual, as the kernels may be swollen by the treatment.

Tobacco in South Carolina.

The people in South Carolina have only turned their attention to tobacco raising within the last 10 years. Six years ago not 100 pounds were raised in the country around Darlington. But the farmers there have gone into the business with intelligence and energy, and the results are very gratifying. King Cotton has been knocked out, and King Tobacco inaugurated in his stead. The annual sale or "break" began in Darlington, Sept. 1, and the first day 30,000 pounds were sold, and 60,000 pounds during the next three days. Mr. C. S. McCullough got the highest price, 50 cents a pound. Over 30,000 pounds were sold at an average of 12 1/2 cents a pound. The acreage will be largely increased the coming year, and much more attention given to raising the finer grades. There is no reason why South Carolina should not raise a large quantity of the fine wrappers which we now buy abroad.

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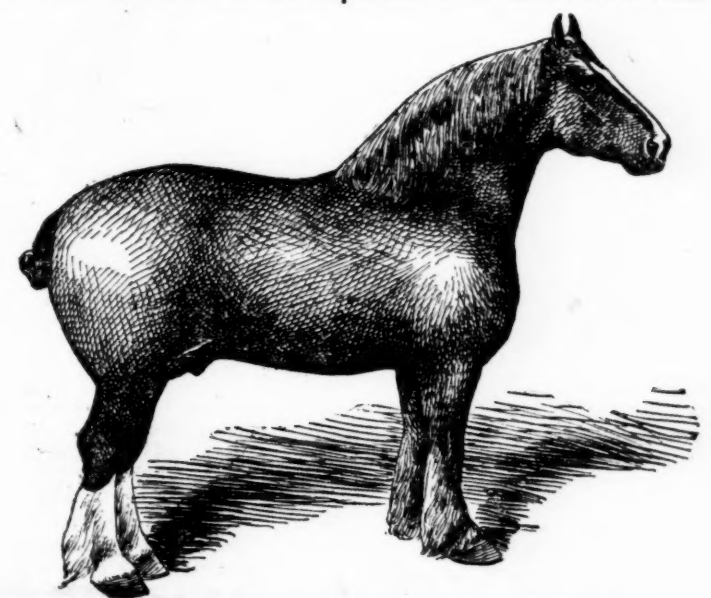
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WENONA ALBERT 3309, OWNED BY BURGESS BROS., WENONA, ILL.



Stock

Feeding Steers.

The Kansas Experiment Station made an exhaustive trial last winter of the relative values of soaked and dry corn for fattening young steers, and also some shoats, which were placed behind them. The conclusions arrived at were:

Will it pay to soak corn? Whether the answer to this question will be a yes or a no will depend upon circumstances. The foregoing facts prove that steers get more out of soaked corn than they do of dry corn, and that the reverse is true of the hogs which follow. It will not pay to soak corn whenever it is necessary to take the precaution against freezing that we were obliged to take in this experiment, nor is it likely to pay if it involves more extra labor than can be done by the regular force in charge of the cattle. But when a feeder is so situated that the corn can be soaked at slight expense, this experiment would indicate that it is a profitable practice, at least, during mild weather.

In conclusion, the facts brought to light by this experiment may be summarized as follows:

1. The five steers fed on soaked shell corn gained a total of 1,632 pounds

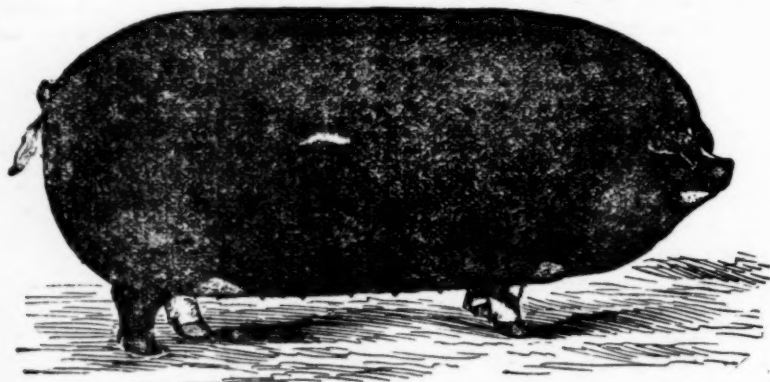
Pen Notes.

Pigs that are suffering from worms should be given a liberal diet of green food, grain, and, where it is possible, buttermilk. A dose of castor oil is also found excellent. A very good vermifuge is made as follows: Calomel, one-half dram; oil of turpentine 10 to 12 grains. This dose varies according to the size and age of the animal.

Pigs have a special gland under the skin on the fore legs, back of the knee on the inner side, which has some function as yet not well understood, but it is known to be excretory, and when it is obstructed in any way lameness of the fore legs ensues. The remedy for this trouble is to scrub that part of the leg with a stiff brush soaked with hot water and soap. On the restoration of the function of this gland, the pig recovers. This part of a pig is to be noted at times and its healthful function preserved.

An Exceptional Animal.

This Poland-China sow, Finish L., 6894, was bred by Michael Rich, of Flanagan, Ill. She was sired by Hustler, 24963, by King's Magnet, 14789. Her dam was Goldie, 44782. She raised seven pigs in March this year by Victory,



POLAND-CHINA SOW.

In 150 days on 282 bushels of corn, while the five steers fed on dry corn gained a total of only 1,468 pounds on 290 bushels of corn.

2. The steers fed on soaked corn, owing to their better condition, brought a higher price in the market than the steers fed on dry corn. Balancing both cost of feed and market value of the two lots, there is a difference of \$25.50 in favor of the soaking of the corn.

3. The hogs following the steers fed on soaked corn made a total gain of 635 pounds, while the hogs following the dry-corn steers made a total gain of 747 pounds. This makes a difference of 112 pounds gain in favor of the dry corn, and the market value showed a difference of \$5.58 in favor of the hogs following the dry-corn steers.

4. Based on the foregoing figures, it will pay to soak corn if it can be soaked for 6 cents, or less, a bushel.

In connection with this subject, it is of interest to know how long it takes a feed of corn to pass through the alimentary canal. To this end, each lot was fed with 50 pounds of red corn during the three last feeds January 15, namely, at 12 m., 3 p.m., and 6 p.m. Previous to this, and also immediately after, they were fed exclusively upon white corn. By 9 a.m. on the 16th it was found that the red kernels, fed the day before, began to appear in the manure. They appeared in increasing numbers until the maximum was apparently reached on the afternoon of the 17th. They then began to decrease, until on the 19th only a few kernels of the red corn were found in the washings from each lot.

Feeding of Cattle.

From Mr. J. F. Scott, of the Alameda Farm, Graham, N. C., the following notes have been received by the Experiment Station. Mr. Scott has had a large experience in feeding and training young horses: "All youngsters require plenty of exercise in a good grass paddock, and while running out days seldom need any laxative food. Good, clean oats and hay free from dust are generally all that is necessary to keep them in growing fix. When handling time comes, at about two years old, of course we feed liberally and as the grass has been taken away we make up for it by feeding one quart bran with two quarts oats and hay. This keeps the colts' system in a good, healthy condition, and if regular feeding and attention is adhered to there will seldom be need for change of diet. Sometimes cases occur where bran mashes or some condition powders or a handful of linseed meal are needed, while carrots and other cooling things are beneficial. Distemper sometimes appears and should be taken in hand at the first symptoms of cough, falling to eat, etc., and preventives administered. Chief among these may be mentioned tar. Thus many bad cases are prevented.

"As the colts advance the treatment is much the same. Sound food and regular care being the main requirements in raising good horses that will sell well. As to training, one cannot give information of much value in so short an article."

Feed Values.

Experiments made in South Dakota recently showed that ground wheat fed to hogs returned 58.39 cents a bushel for the grain. Corn returned 50 cents, and peas 65.36 cents. The wheat ground coarsely made the best quality of pork, and returned two and a half cents only a bushel more for the feed than the whole grain. Thus the difference did not pay for the grinding, and as it was found that when the wheat was steeped in water it was about equal to the ground grain, the grinding is not recommended.

Yard Echoes.

The latest cure for a balky horse is to lift up his foot and hammer on the nails in the shoe. It is the old idea of giving him something else to think about.

For a horse affected with distemper, a mixture composed of one ounce tincture of muriate iron, two ounces ammonia muriate, two ounces glycerine and 12 ounces of water is a very effective remedy.

The saving on a farm when the horses walk three miles an hour, over when they walk two miles and a half, is 20 per cent., or in other words the fast team can rest a whole day in the week and yet do as much work as the slow team—do it easier and do it better.

SHEEP AND WOOL.

Shearings.

London now sets the prices of the world's clip, and wool is higher there than in New York.

The United States leads the world in Merino breeding and will in time show up with England in mutton production.

The Suffolk sheep have to show along with the Hampshire this Fall at the Western Fair, one of the leading fairs of Canada.

The wool growers of the West who would understand the markets nearest their doors should receive the circulars of Silberman Brothers, Chicago, Ill.

H. H. Williams, Salesville, O., who advertises registered National Delaine-Merino sheep and Poland China hogs, writes of extending his business this Fall, and says his sheep are all doing fine.

The Shropshire breeders can point with satisfaction to the advanced prices of Shropshire wool both last year and this. So marked is this that Shropshire wool has a special quotation of its own.

Special attention should be given to the growing of roots for sheep at this time of the year, and between now and next Thanksgiving enough roots can be raised to keep the flocks in fine condition all through the year.

It is found that flockmen who have faith and zeal in their business, invariably have mutton characteristics. These may not mean enormous size, but mean early maturity, quick fattening, broad-backed, short-necked, full, deep, round-quartered, short-legged sheep, that carry the most meat where the best is looked for; that cut up to advantage and give juicy, luscious chops. It is to be kept in mind all the time that big fat sheep have too much tallow for the best class of customers; that tallow does not mean meat, and is the only decent sort of mutton discriminated against.

The sheep was the first animal that we have any account of that was domesticated by our race. It is also the only animal that we have any reason to suspect has been in closest relations with civilization from the first parents, with all peoples, to the present day. It has contributed more to the refinement and happy environments of man than all other animals combined. It is the only animal that has universally conformed itself to suit the wants and tastes of man and to adapt itself to the conditions providing and sustaining the intelligent, industrious tribes of men. It has not only been man's companion and benefactor but it has been a factor in the betterment of the soil from which it was obtained that sinful man should earn his bread.

Sheep farmers are realizing that they lose more from parasites than all other causes combined. Of these too little is known and still less is done because of ignorance of the nature of these broods, as to where they come from, when they enter the sheep, and how to expel them from their host. Veterinarians tell us what to do when it is known that the flock is infected, but beyond that, nothing.

The parasites are a standing menace; they possess the pastures; they exist in the feed, both green and growing, as well as carefully harvested and stored in the barn. The contest is unequal; the farmers are compelled to go on blindly fighting an unseen, mysterious, deadly, persistent, hydra-headed foe against fearful odds. The intelligent farmers look to the Government for scientific investigations that shall help them to understand and overcome these troubles in a practical manner. The ignorant farmers lose their sheep and complain that sheep do not pay as they used to.

Cyclops Sheep.

The revolution in sheep raising is not confined to the United States alone. There is not a wool growing country on the globe to-day that does not look to the mutton product as the balance wheel of their sheep industry.

Polypemus was the first shepherd mentioned in profane history. He had but one eye, which was situated in the middle of his forehead; he was the son of a giant, and lived in Sicily, according to the fable. This cyclops offended Ulysses, who burned out his eye. His sheep are reported to have been of so large size that some enemies who would have perceived from this cyclops's presence fastened themselves to the bellies of the sheep, and so passed out in safety and escaped merited and just punishment.

A Salt Pointer Worth Salting Down. "Sheep grazing on the sea coast where the vegetation is impregnated with salt, where the salt is sometimes seen to glisten on the grass and weeds, deposited there by evaporation from the salt-laden spray, are almost entirely exempt from parasitism. Every mouthful of their feed has salt in it. The parasites are constantly repelled; they acquire no foothold. But if the sheep receive salt only once a week, between the saltings the stomachs will be filled several times with feed in which there is no trace of this useful insecticide. There may be salt enough taken into the blood for the animal's health, but the great point is that between times the door is left open to the invasion of the deadly parasites."

If this is true, and experience and observation shows that it is, why not supply this abundant salt ration to the flocks not so fortunately situated? Salt is cheap enough to be sown on the pastures, especially on low, moist places, where the parasites are most likely to be found. Sow salt on rank and coarse grasses, on weeds, briars and brush, thus encouraging the sheep to feed upon them and preventing the parasitic germs which they may harbor from infesting the flocks. Try it for all it is worth.

The History of Saxony Sheep in the United States.

The Saxony sheep were introduced into the United States about 1820. The Spanish Merino had been introduced about 18 years, and apparently established themselves in the hearts and homes of the most enterprising farmers of the country. The tariff of 1824 gave a tremendous impetus to the raising of broadcloth wools, and a boom was created in favor of the Saxony or Electoral sheep. The pure-bred and grade Merino flocks, though giving elegant wools, could not meet the demand for XXX, pick-lock and picknick wools, and as nothing else would suit the then popular demand for broadcloth, the manufacturers discriminated against such clips and in favor of Saxony.

Saxony rams were in tremendous demand for crossing purposes. There was hardly a flock that did not have Saxony blood infused into it. Prices were fabulously high and the craze for Saxons was shared by every progressive sheep raiser. The United States Government was favorable to the perpetuation of this industry. Congress passed laws that were regarded as helpful and proper to establish the growing of this class of wools. It was to this end that the United States Congress in 1842 sent the late Charles L. Fleischman, a native of Germany, to investigate and report his observations on German agriculture and its system of raising broadcloth wools, to the intent that the Saxony industry might have the benefits of the experience of those painstaking agriculturists. But owing to the red-tape delays this valuable report was not printed until 1847, when by changes in the tariff laws a reaction had set in, and Saxony sheep husbandry was doomed to retire before the advance of the victorious Spanish Merinos that had been almost eliminated from American agriculture. This revolution had begun in 1840, but the expectation of permanence and still greater victory had hinged on the greater knowledge to be obtained from Mr. Fleischman's mission to Saxony, where the breed were cultivated with the greatest assiduity and success. The retirement of the Saxony sheep continued without any abatement before the victorious Spanish Merino.

Unfortunately, for the Saxony sheep the great popularity of the breed gave occasion for the most reckless frauds and speculations. As anything would sell at high prices that was imported from Saxony, there were vast numbers of inferior and grade sheep introduced into this country. The sheep did not possess the constitution of the more hardy Spanish; they sheared from two to three pounds with ewes and four to six pounds with rams; but the prices were so much higher for the Saxony wool that the farmers forgot to compare the merits of the two breeds and continued to follow the crowd who shouted for the Saxony XXX and picklock and picknick grades of wool—the finest of all wools grown.

Never was a vanquished foe so fortunate as the Saxony sheep were in falling into the hands of a lot of wealthy, careful, intelligent, persistent farmers, mainly located in western Pennsylvania, West Virginia, and eastern Ohio. These breeders were not the kind of men to abandon an old love, to leave a breed of sheep that had made them all wealthy, to leave the old and take up with the new that they had seen go out of existence, leaving the Saxony in full possession of the field. The few friends of the Saxony sheep are still breeders and are doing so from choice. They have, without going outside for new blood, greatly improved the usefulness of their flocks, and notwithstanding the low price of clips they find about as little occasion for discouragement as other sheepmen. The motto is of the highest value in the city markets, and it is an open question if they cannot grow as many pounds of as good mutton to the acre as anybody.

As to the future of Saxony-Merino sheep, and Saxony clips, in the United States it is not easy to forecast. Should fickle Dame Fashion inaugurate the wearing of broadcloth goods again, there would occur an expansion of this husbandry and give a golden reward to the few breeders who have stayed by the high character of their flocks. If there is anything else that can stimulate and increase Saxony flocks it does not now appear. No one questions the facilities of the country for producing the finest Electoral wools. No one who has studied the fitness of climate and pasturage for these sheep can doubt the profitable use of certain lands to this industry. In the meantime these old and reliable breeders will stay by their flocks; they have enlisted for life in the culture of Saxony sheep and broadcloth wool, and they are made of the stamina that knows no retreat from a good thing that they have tried and understand.

Our illustration represents a pair of improved Saxony-Merino sheep belonging to the Secretary of the American Saxony-Merino Record Association, and are recognized as choice types of the breed, since this flock have stood all the tests in the show-pens for many years. Mr. Clark's statement of the history of this flock is every way trustworthy and reliable. He says: "My flock was established by Joseph Clark, father of the present owner, about 1820. They have been bred in line ever since, with special regard to the highest class of wool; but due attention has been given to form, size and vigor of animal. They will compare in size with any of the Merino classes. They are good feeders and healthful; always meeting a ready sale at the highest prices. My sales of wool for the last 25 years have averaged over 62 cents per pound."

The Lincoln and Leicester cross has given value to fleeces and also given value to the carcasses. When this cross shall be better understood the demand for rams of these breeds will be very large.

The Cotswold vs. Southdown Sheep—Which?

EDITOR AMERICAN FARMER: Will you kindly describe the characteristics of the Southdown and Cotswold sheep, giving approximate weight of wethers at two years of age, and difference in wool and for what particular purpose each one is used in manufacturing? Also approximate weight of wool in grease per fleece; whether they have been used in breeding to cross-bred Merino (Spanish and French) for range purposes, to your knowledge or not; if not, what would you think of this breeding, the object being, primarily, mutton? What is the approximate weight of lambs of these two breeds at four months (live or dressed)? Please give me addresses of one or more breeders of Cotswold sheep.—Geo. R. Wilson, Elko, Nev.

Answer: The Southdown is the completest type of the English short-wooled

rams, 140 pounds; ewes, 80 pounds; two-year-old rams, 175 pounds; ewes, 130 pounds; fat wethers at nine months old, 120 pounds; fat wethers at two years old, 200 pounds.

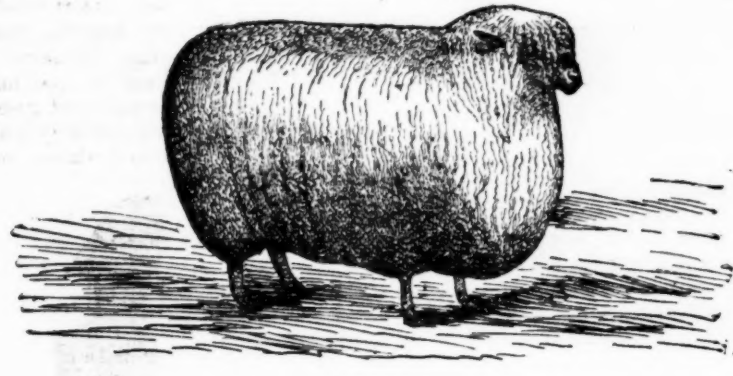
The Southdown-Merino in the first cross is equal to the pure Southdown for mutton and almost equal to the Merino in fleece qualities.

The Southdown is, next to the Merino, the hardest of all pure-bred sheep. They are possessed of desirable flocking qualities.

We refer to Mr. John G. Springer, Secretary American Southdown Association, Springfield, Ill., as the highest authority on Southdown sheep in America.

For Cotswold sheep, Geo. Harding & Son, Secretary of the American Cotswold Association, Waukesha, Wis., is perfectly reliable.

The illustrations accompanying this description of the two breeds may be



COTSWOLD RAM.

sheep and the highest in the grade of agricultural mutton. The mutton of this breed gives a standard for mutton the world over. Other mutton is graded according to its comparison with the standard—English Southdown mutton, good, bad, and indifferent. The Southdown is a native of the English downs, a range of chalk hills 70 miles long and from four to 10 miles wide, running diagonally from the southwest to the northeast across the south part of England. The feed is short, fine and highly nutritious, and this sheep, the product of such feed for more than 2,000 years, has taken its characteristics from such a healthy habitat and retains these high qualities wherever it is transported.

The Cotswold comes within one (the Leicester sheep is here referred to) of being the very opposite of the Southdown in size and character of fleece. The Cotswold is the oldest breed of the long-wooled sheep. It, too, belongs to hills—the Cotswold hills from which the breed as generally supposed takes its name. This, however, is not so, since the range of hills, which runs through the eastern side of Gloucestershire in a direction from southwest to northeast, took the name from the fact that the sheep that occupied the region in early times were protected at night, and from Winter storms, in cotes or low sheds, and really gave the name "Cotswold."

The soil of the Cotswold hills is thin, but susceptible of cultivation, and the food supply is sufficient to give greater size to the animals. The sheep from hills are not so large, though regarded as more pure-blooded than the Cotswolds of the lowlands adjoining.

The Cotswolds were regarded as a very healthy breed, but in crossing with the Leicesters, a highly artificial breed, to gain a better form and greater aptitude to fattening, and especially for securing early maturity, the hardness of the breed was much depreciated. To remedy this weakness, recourse was had to the Southdown cross, and hence the black spots so often found on the face, ears and legs of the best Cotswold to this day.

The Cotswold wool is long, open and curly, varying more or less as the Leicester blood shows itself. It may be said that the fineness and value of the fleece is due to this cross in a very marked degree. The wool is used for combing purposes, the finer for dress goods and the coarser for braids, tassels, and carpets. It is a characteristic of this breed to show long locks of wool coming down from the top of the head. These are called "love locks" and add immensely to the style of the sheep. The fleeces

safely regarded as the best types of each breed.

The Future of Sheep.

J. S. Crosby writes to the Detroit Free Press as follows:

The true test of wool, so far as the producer is concerned, is the price per pound at which he can sell his production. The producer will apply the price test and not enter into the question further. He will take environments into account if he be wise, and select the kind of sheep that will produce the highest-priced wool and the greatest amount of it.

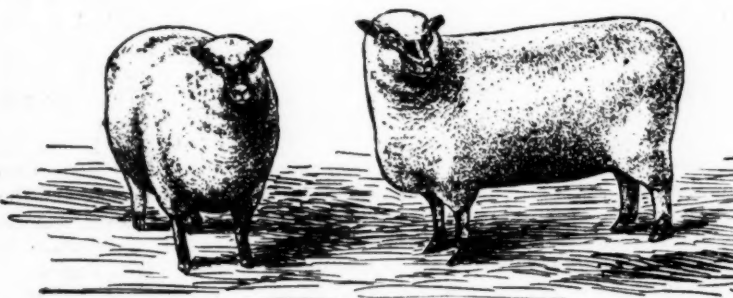
The time of year is with him now when he can get the best and most accurate information. Let him visit the wool rooms in his nearest markets, in fact, take time and visit a number of them, and see the kind of fleeces the buyers pay the most for. See what kind the manufacturers want. The Eastern wool commission men, the manufacturers and the local buyers of wool seldom know anything about sheep. They know wool, but care very little about sheep. The buyers do not seek wool worth only six, eight, or 10 cents per pound. They find this readily enough without looking for it; it is the great bulk of the market supplies. The producer should grow wool worth 12 to 20 cents per pound now, and he will find a market for such wools if he will find out how to produce them.

The men who produce, if it be done intelligently, must know both wool and sheep, for, as conditions now are, the sheep that produces the highest priced wool brings the most per pound as mutton—the low-down, thick-meated, well-wooled and long-stapled sheep. The sheep raiser can get the idea of price and quality of wool from the local wool buyer, and the idea of the sort of a mutton sheep now wanted from the local stock shipper.

By observing the foregoing, the sheep raiser is not left to the advice of the ram breeders, nor to the special stock papers or advertisements, but has the facts as shown by market tests in both cases, and can select such sires as will bring the best price results.

The manufacturers of wool are not going to buy the grease and dirt at the fancy prices heretofore paid, and if the manufacturers do not buy it the jobbers in wool cannot. It must be quality that makes the difference in price.

Remarks: Friend Crosby is talking right along the lines, the plain paths, that the sheep raisers of this country must follow if they would meet the conditions of success in this sheep and wool



SOUTHDOWN SHEEP.

run from eight and 10 pounds to twice as much in best-kept flocks. The weight of carcass varies, for the same reason, often reaching from 175 to 300 pounds live weight. Lambs 10 and 12 months old often 200 pounds when well kept.

The Cotswold-Merino cross is regarded with especial favor by those who have tried it, and who give liberal nourishment. The writer has seen most excellent results in the first cross.

The Southdown wool is classed as medium, and enters into the manufacture of cassimeres, flannels, and the best yarns. It is a heavy wool producer in its best form. Under more liberal treatment it has increased during the last 25 years in weight of fleece from three or four pounds to seven and eight and 10 pounds, as an average of the flock. Southdown wool sold in the Eastern market last year for about 18 cents per pound.

They are early maturers; lambs eight and nine months old averaging with almost any of the breeds, and have the desirable trait of always being fat from the earliest age. The following may be considered a fair statement of the weights at different ages: Six-months-old rams, 75 pounds; ewes, 50 pounds; one-year-old

business. There is altogether too much wool of one kind, a kind, too, that other nations can produce cheaper than the American farmer produces it. There is altogether too much common mutton in the markets, which brings a lower price itself, and, worse yet, cuts down the price of the limited supply of the better grades. All this poor practice can be avoided if the sheep farmer has the inclination and intelligence to attempt the changes and meet the conditions.

"Mauchamp Merinos."

Mr. Smith, the originator and breeder, says of them:

They are standard bred, pony built, smooth, graceful forms, good nurses, easy feeders, mature early, hardy and sound, not subject to foot rot or paper-skin; combining Delaine or Paisley wool three to five inches long, white, crimp and glossy, not greasy. They can live on grass and hay alone, without housing or extra nursing; will produce wethers that feed to 120 pounds and clip 10 to 12 pounds.

He claims he can grow more wool and meat to the acre, and cut a larger per cent. of best meat to the carcass, than can be done with any other breed of sheep.

Use of Sheep Dip.

EDITOR AMERICAN FARMER: If there are any of the readers of your paper that have a practical knowledge of the use of sulphur and lime as a sheep dip for curing scab, they would confer a favor on many sheep raisers, 1 for one, by giving information through your valuable paper as to the proper preparation of each to be used to a certain number of gallons of water to effectually cure the disease; and if there is any danger, in any reasonable limits, of damaging the sheep.—B. H. WILHELM, Vernon, Ariz.

The Australian sulphur and lime dip is made as follows: Take of flowers of sulphur 100 pounds, quicklime 150 pounds, water 100 gallons. Mix and stir, while boiling, for 10 minutes, until the mixture assumes a bright red color, then add three gallons of water. Hold the sheep in the mixture until the scabs are thoroughly soaked. Immerse the head at least once. Use the dip at 100 to 110 degrees Fahrenheit.

In various sections of the United States the following proportions are used:

Texas and New Mexico—30 pounds of tobacco, seven pounds of sulphur, three pounds concentrated lye, 100 gallons of water.

Nevada—Sulphur 10 pounds, lime 20 pounds, water 60 gallons.

California—Sulphur four pounds, lime one pound, water enough to make four gallons.

Kansas—Sulphur 22 pounds, lime seven pounds, water 100 gallons.

Sulphur and lime are probably the cheapest recipe, but the lime is apt to injure the staple. Tobacco and sulphur form the best combination known for the treatment of scab. To every 100 gallons of water there should be 35 pounds of good strong tobacco (if stems or seeds of inferior parts are used there should be more) and 10 pounds of flowers of sulphur. This should be used at a temperature of 120 degrees, and will leave the wool in healthy condition, while killing every sort of a parasite. Where tobacco is used, care should be taken to keep the wash out of the eyes, nostrils and mouth of the sheep. To insure entire success, dip again within 10 days or two weeks, so as to catch the larvae which may have hatched out.—EDITOR AMERICAN FARMER.

The New England Kennel Club.

The New England Kennel Club will hold a Fall Terrier show at the Country Club grounds, Brookline, Mass., near Boston, beginning Oct. 30. In connection with it will be whippet dog racing, sheep dog trials, polo matches, golf and tennis games, pony racing, etc. The meeting, which is a novelty in this country, promises to be a great success. Full particulars can be obtained from D. E. Loveland, Secretary, 125 Tremont street, Boston.

Too Foreign.

"You ought to be a happy man," remarked the visitor to the farmer, "to own land that you can raise cotton, corn, wheat and, in fact, anything from."

"You're wrong, mister, there's one thing I can't raise from it."

"What is that?"

"A mortgage."—Exchange.

A Decided Novelty.

The editorial announcement of the *Picture Magazine* of New York declares that "A choice and varied assortment will be given each month of odd, useful, interesting, practical and amusing illustrations." The promise is well fulfilled in the September number which has just come to hand, for it contains eighty illustrations, while the price is only five cents per copy or fifty cents per year.

The publication is certainly a novelty in this country, for in twenty large pages (equal to four ordinary magazine pages) it contains no reading matter aside from the briefest of titles on each picture with an occasional necessary line of explanation. A similar but more expensive magazine in England has been very successful, though it is of less actual merit than this one, and the one now put forth in New York by the Page Publishing Company can hardly fail to succeed.

The pictures are of all imaginable sorts, harring the improper, and are gleaned from all over the world. It will be furnished with the AMERICAN FARMER for 75 cents a year.

WATERPROOF OVERCOATS.

The Mackintosh Brought Within the Means of Every One.

The Mackintosh—a thin cloth coat impervious to rain—is universally used abroad as an overcoat for Winter, Spring and Autumn. The Mackintosh is a regular spring overcoat of fine quality, so far as appearance goes, and only the weight distinguishes it from the ordinary overcoat. It is perfectly waterproof and warmer than an ordinary overcoat. The ordinary coat of a Mackintosh ranges from \$15 to \$25, but one of the American manufacturers, led by the success of the Mackintosh, has agreed to sell single coats to subscribers of THE AMERICAN FARMER at the wholesale price, per dozen, and this reduction brings the cost to about \$1.50.

In taking size of bust measure over the coat over the Mackintosh is to be worn.

The black coat is made from a fine wool, smooth surface cloth, that is less showy than the blue, but will give the best of service. The price, including delivery, is \$1.50. The price of the coat is \$1.50. The price of the coat is \$1.50.

Write of different sizes will be made to order for \$1.50.

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The illustration is a detailed black and white woodcut-style drawing. At the top, a banner reads 'POULTRY PIGEONS & BIRDS'. In the foreground on the left, a large rooster stands facing right, with a large, stylized flower (possibly a lily) emerging from its back. In the background, several other birds are depicted: a pigeon on the right, and various smaller birds and chicks scattered across a landscape with some foliage. The style is characteristic of late 19th-century magazine illustrations.

A Fine Display of Feathers on Alexander Island, Virginia.

SINGLE COMB WHITE LEGHORN COCK.

The dainty little Leghorns were prominent birds, as they always are. Their popularity is renowned and where eggs are spoken of reference is invariably made to this fowl as the leader of the egg type. The pair of Single Comb White Leghorns exhibited by Mr. Oliver were splendid specimens, and well worth the blue ribbon. The pullet shown by this gentleman is hard to beat in any show. The second prize winners were shown by Mr. J. M. Dailey, of this city. His cockerel will develop into a very fine bird.

INDIAN GAME COCK.

I was troubled a great deal with daisies and other weeds and I knew that in time they would choke out the grass. Mowing don't seem to check them much, so, little-at-a time, I have pulled them up and the "grass grows green."

There is still another yard that I have, as yet, done nothing with, and I fear that the grass roots are completely gone out of part at least. I shall use the brush on this, however, and expect to bring up what grass there is left. I have a large yard that, as I find time, I am working

bones; but what you should have for your hens to make them lay is the fresh green bones from the butcher, and cut them so as to convert them into food for hens. The poultry droppings will then also be more valuable, and the young stock will grow more rapidly. We have used bone cutters, and will state for our part, that if we supposed we could not buy another, we would not sell the ones we have for 10 times the cost, and the hens have long ago paid us the cost by laying more eggs.

As most of my money at this time was extracted, I wrote to some commission houses in the large cities, asking them what they would pay per pound for honey in 60-pound cans, and sent samples with each inquiry. The best offer received was six and a half cents, as they said they could afford to give this much owing to the fine quality of the honey. The thought occurred to me then, and I have never changed my mind since, that the people at home, too, would buy honey in large quantities at these prices and if so, why not give them a chance and save the freight and expense of packages or vessels to ship it in?

industry, will make this meeting one of especial interest.—JOHN G. SPRINGER, Secretary, Springfield, Ill.

When writing mention this paper.

Established . . . 1819.

75TH YEAR.

THE AMERICAN FARMER.

For information of our readers, the American Farmer is published monthly at Washington, D. C., and Baltimore, Md., by The American Farmer Company, 729 New York Ave., Washington, D. C.

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TERMS OF SUBSCRIPTION. ONE YEAR IN ADVANCE. 50 CENTS.

Write for special inducements to club rates. Advertising rates made known upon application.

Our readers will oblige us, when writing to parties advertising in this paper, if they will state that they saw the advertisement in The American Farmer. This is a little trouble and costs nothing, but it helps us, and is information wanted by the advertiser.

When sending in subscriptions specify whether for General or Southern Edition. Unless specially directed for the Southern Edition, all subscriptions will be entered for the General Edition.

OUR NEW CLUB OFFERS.

We have arranged to club with the Weekly Witness of New York. Its price is \$1 a year when taken alone. The Witness is a 16 page weekly paper and among its contributors Rev. Josiah Strong, D. D.; Rev. John Hall, D. D.; L. L. D.; Rev. Robert S. MacArthur, D. D.; Rev. Theo. L. Cuyler, D. D.; Rev. M. C. Lockwood, D. D., of Cincinnati; current weekly sermon by Dr. Talmage; Sunday school lesson by Dr. George F. Pentecost, etc. It is one of the strongest and most popular family newspapers published.

The Witness and THE AMERICAN FARMER will be sent to any address for one year postpaid for the small sum of \$1.20 for both publications.

Sabbath Reading is a 16 page weekly paper, non-political, non-sectarian; no secular news. "Determined not to know anything among you save Jesus Christ, Good, not goodly, Religion, not dull." Contains Sunday School Lesson; Christian Endeavor Topic; Sermons; Stories; Live Reports of City Missions. Sixteen pages filled with the best Christian thought of the age. Sabbath Reading alone costs 50 cents a year, but we have made an arrangement with its publishers so that we can send both it and THE AMERICAN FARMER, postpaid, to any address for one year for only 75 cents.

At Home and Abroad, the leading musical monthly publication of New York City, will be sent one year, with THE AMERICAN FARMER, for \$1.10, both papers postpaid. Every number of At Home and Abroad contains a collection of vocal and instrumental music that could not be bought separately in sheet form in the stores for less than 70 cents. Remember, that by our arrangement 12 numbers of this publication and THE AMERICAN FARMER for a year for only \$1.10.

These offers are open to all subscribers in connection with THE AMERICAN FARMER. Neither the Weekly Witness, Sabbath Reading, nor At Home and Abroad can be furnished by us without a subscription to THE AMERICAN FARMER for one year accompanying the order.

OUR CLUBBING LIST.

The American Farmer Will be Sent in Connection With Any Other Paper or Magazine.

We will send THE AMERICAN FARMER and any other paper or magazine in the country at a reduced rate for the two. The following is a partial list of the periodicals that we club with:

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Washington's Weekly. 2.50 3.00

Washington's Weekly. 2.50 3.00

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PROSPECT OF FOREIGN COMPETITION

It is no longer a question of extending the sale of our grain abroad, as the Tariff Deform demagogs have been deluding us, but that of saving our home markets. This is our most serious problem.

The Tariff Bill took off the protection of 25 cents a bushel on wheat, and substituted a 20 per cent. ad valorem duty. As everybody knows, ad valorem duties are levied according to the cost at place of production. What this may be in regard to wheat remains to be demonstrated, but it will probably not be placed higher than 25 cents a bushel on Argentine and Russian wheat. Indeed, the heads of the big English syndicates which are operating the Argentine farms have always claimed that they could make large profit raising wheat at a shilling—24 cents—a bushel. This would make the duty on it, when imported under the present law, less than 5 cents a bushel, and it can therefore be landed at the seaboard cities of the United States for 30 cents a bushel, plus the transportation from Buenos Ayres. The transportation, let us say, will be from 15 to 25 cents a bushel, making the total cost of Argentine wheat delivered at New York, Boston, Philadelphia or Baltimore in the neighborhood of 50 cents a bushel.

The latest estimates are that Russia will have 140,000,000 bushels, and Argentine 80,000,000 bushels to sell, which together make perhaps 25,000,000 bushels more than Europe is likely to want. Therefore we may expect at any day an offering of wheat from those countries in our seaboard exchanges, which will make a break in the prices in our home market.

Such is the pass to which blatant demagogism has brought us. Our home wool market is ruined, and now our grain market is seriously threatened.

THE OUTLOOK FOR WHEAT.

It must be admitted that the prospect for an enhanced price for wheat is not encouraging.

The most important event of each year is the annual Grain Congress at Vienna. At the one held last August the Hungarian Minister of Agriculture carefully prepared tables of the wheat crop of the world. These footed up a total of 2,476,000,000 bushels, or very nearly 2,400,000,000 bushels more than last year. The estimates for our crop was 406,000,000, whereas it is now pretty certain that this will reach over 500,000,000 bushels, so that the crop of the world will be at least 300,000,000 bushels more than last year.

The crops of all the wheat-importing countries are so much better than last year that they will not need so much wheat by 15,000,000 bushels. Last year we sold abroad 164,000,000 bushels. This year we shall have, unless the use of wheat for stock takes large dimensions, about 175,000,000 bushels to export.

Now comes the question of competition with our great rivals—Russia and the Argentine Confederation. As to the Russian crop nothing very definite can be known, as agricultural statistics are in a very chaotic condition in the Czar's empire. All that we know is that the crop has been good, and, like last year, grain will keep coming out of the Russian ports in seemingly exhaustless quantities.

From the Argentine Confederation the outlook is equally unfavorable. The 38 cents a bushel which the growers have been receiving is "big money" to them and has encouraged them to put in much more land. A correspondent from Buenos Ayres to the London Times writes:

"In spite of the low prices now ruling for wheat, a large increased area of land is being broken up along the railways in the provinces of Buenos Ayres, Santa Fe, and Entre Rios. Should the next harvest be a favorable one, it is estimated that the amount available for export will not fall far short of 2,500,000 tons. This will, of course, give plenty of freight for the railways traversing the grain districts, and, if other circumstances are favorable, may mean the beginning of better days for many of the employees."

"This increase in the wheat-growing area of the Argentine is somewhat curious when the starvation prices of to-day are considered. But the production is chiefly the work of Italians who have emigrated with their families of late years from Italy. These people take up a piece of land and do all the manual labor themselves; they grow what food they need, and are content with very little; they are not looking beyond what is absolutely necessary in the matter of clothes, and nothing in luxuries. Hence, whatever return they get from their crops is a pure gain for them, and is available to pay the installments due on the land they have selected. In many cases the land owner gives the land and receives 12 per cent. of the gross product of the crops as his rent. Under these circumstances the cost of the production

of wheat is extremely small and compares favorably with cost of cultivation in other countries."

It is estimated that the Argentinians may throw into the markets as much as 100,000,000 bushels of wheat this year.

THE PRESENT SITUATION.

Some years ago a President of the United States said: "It is a condition not a theory which confronts us." This is what confronts the farmers of the United States to-day. Of theories, they have had more than a sufficiency in the past few years. Theories on money, on tariff, on taxation, have been dinned into their ears incessantly, and usually by men whose study of these questions and mental capacity for understanding them were ridiculously disproportionate to the amount that they talked and wrote. The rule has been that the less a man knew about money, tariff, and taxation, the more glibly he talked of them, and the more certain he was that his ill-digested fermentations were gospel truths.

We have all had the affliction of seeing these theories attempted to be carried into practice. There could have been no more damaging demonstration of the folly of following the lead of these quacks than the country has had.

The question before the farmers is whether they will allow these mountebanks to continue their ruinous rule. They have absolutely failed to accomplish a single one of the good results that they have been so loudly promising their dupes; most of the promises they have forgotten or ignored. On the other hand, they have done the country, and particularly the farmers, an incalculable injury. The worst calamity-howler could not have predicted more misfortune than they have brought about.

The time for applying the remedy and ending this misrule is now at hand. Next month the people are to select the men who are to rule the country for two years. Let the farmers make sure that these shall be men who have an intelligent comprehension of the needs of the country, of the policy which will restore general prosperity, and which will adequately protect the farmer's interests, and insure to him a fair return for his labor, care, and skill. Let us everywhere have the demagogues, the visionaries, the economic quacks sent to the rear, and safe, practical men sent to Congress in their places. We want no more men who will be chasing the pot of gold at the foot of the rainbow of "foreign trade," but men who will see that the best market in the world—our own—is carefully preserved to our own people, and that the \$300,000,000 worth of farm products which we buy abroad every year are raised on our own soil.

Let us have an era of business common sense succeed this nightmare of demagogic folly and incompetence.

The 17th Ohio Congressional District is composed of the Counties of Licking, Holmes, Coshocton, Tuscarawas and Wayne, and raises a large share of the wool produced in Ohio. It has been represented by J. A. D. Richards, who was elected by a majority of over 6,000. But he forgot the interest of his constituents so far as to vote for free wool. The results have simply been ruinous. Three years ago the farmers—who raise some of the finest merinos in the world—were getting from \$3 to \$4 a head for their sheep, taking the run of the flock. Now they are glad to take from 65 cents to \$1 for the finest of the lot. At a recent sale at Pataaskala a large number were sold at \$4.50 a dozen. There were a year ago 400,000 sheep in the district, worth \$1,500,000. Now it would be a rash man who would give \$500,000 for the lot, and Mr. Richards is felt to have cost his constituents \$1,000,000 in this item alone. Consequently he is standing by his political grave, and the interment will take place early in November.

An encouraging experiment has been tried in working convicts upon the roads in the vicinity of Charlotte, N. C. A Good Roads Convention was recently held in that city, and the members, upon inspection, found the roads that had been made by convict labor were equal to the best made anywhere. The entire cost of guarding, feeding, lodging, clothing, etc., of the convicts, and medical attendance, averaged 21 cents a day, making the expense of employing 50 convicts for 30 days only \$315.

The English farmers are feeling the competition of Russia and Argentine very severely. They are only getting 55 cents a bushel for wheat now, when they thought themselves ruined last year, with wheat selling at 75 cents.

PERSONAL.

Franklin Lawton died at his home in New Rochelle, N. Y., Aug. 7. He gained some fame and a moderate fortune by introducing the blackberry which bears his name. Until the appearance of the Lawton blackberry, also called the New Rochelle and the Secor Mammoth, the market was supplied from the woods by the various wild varieties of the *Rubus villosus*, or high blackberry, so common all over the country, and, in fact, the original of nearly every variety at present under cultivation.

About 1840 Lewis A. Secor found growing by the roadside near his home at New Rochelle a blackberry with very large oval fruit of an intensely black color and very juicy. Its flavor was rich and sweet, and it was less seedy than any he knew of. He dug up some of the bushes and transplanted them into his garden as an experiment, and found that cultivation greatly improved the fruit. For nine years Mr. Secor grew his berries, but could not get anyone to accept a plant even as a gift. At last Mr. Lawton, at that time a young lawyer of New Rochelle, took a lot of the plants and berries and exhibited them in this city, where he created a sensation with them and made a small fortune out of the sale of the plants.

The biggest farmer in the South is Col. Jas. A. Smith, of Smithsboro, Oglethorpe Co., Ga. He has 23,000 acres, on which he employs 200 convicts and 500 free laborers, runs 300 plows, and raises 3,500 bales of cotton, 30,000 bushels of corn, 500 head of cattle and 500 hogs. He ships a carload of cattle every week, milks 150 cows and makes 75 pounds of butter a day. He has a grange factory, cottonseed-oil mill, and a grist mill on his place. He was an overseer before the war, and began after the war with a "three-horse farm."

Aug. 9 Mr. Lester, of Salt Creek, Ill., went out to the barn to shoot a steer. The animal kicked over a tank of gasoline, which caught fire, and burned up, among other things, Lester's vest, which was hanging near, and contained \$122 in money, \$350 in notes and a valuable watch.

Mr. C. S. Chapman, of the People's Bank, Marlborough, O., has received word from the Committee of Avaris, Columbia Expedition, that he had received the highest award for the best fleece of Dometine wool. Mr. Chapman has been engaged for 25 years in developing this style of wool and is one of the largest wool growers in the country. Although a Presbyterian, he does not allow himself to talk about the present tariff tinkers for fear of making a break and saying something not authorized in the Westminster confession of faith.

Trustees of the University of Illinois accepted the resignation of Professor Morrow, of the Agricultural Department.

NEW PUBLICATIONS.

ANNALS OF HORTICULTURE. By Prof. L. H. Bailey, Professor of Horticulture, Cornell University. Published by Orange Judd Co., New York. Price \$1.

This most recent issue of this indispensable year-book is complete for its full history of horticulture at the Chicago World's Fair. The author spent most of the Summer at Chicago for the express purpose of collecting facts for this volume. This is the only complete history of horticulture at the Columbian Exposition. It contains a full list of all the plants and exhibits; the only correct catalog of World's Columbian Plants. The volume also contains a full discussion of the yields and prices of fruits, vegetables, and all other horticultural crops in North America during the year. There is a History of the Orange Trade, and accounts of the efforts to introduce American fruits into European markets. There is also a full set of statistics of the horticultural industry and exports for the year. Horticultural interests are well represented. There is a full account, with awards, of the World's Fair Chrysanthemum Show.

RELATION OF TAXATION TO MONOPOLIES. By Emory E. Johnson, of Harvard College, Public and Social Science, Philadelphia. Price 10 cents.

A very thoughtful essay upon an important issue.

THE QUEEN OF PECTADOR. By R. M. Manley. Published by the H. W. Hagen Company, 114 Fifth Avenue, New York. Price 50 cents.

The author is highly original and sensational, but the plot is a startling story in so quiet a manner that he escapes the reproach of too great strain after effect. The tale contains pleasant love-making, some gentle satire and many dramatic situations.

Notes.

The Overland Monthly for September has a magnificent story by Hjalmar Hjorth Boyesen—"Zoo-Wee, a Story of the Indian Agency." This is accompanied by a full bill of fare of what good things, serious and instructive, exciting, entertaining, bright, lively and amusing. Published at San Francisco, Cal. Price 25 cents.

W. D. Griffing, proprietor of the Pomona Nurseries, Maclean, Fla., has gotten out a new and most valuable descriptive catalog. It has one great feature in an absolutely correct and complete list of all the plants and shrubs that are grown in the nurseries. It has also full description of the best method of transplanting and caring for trees.

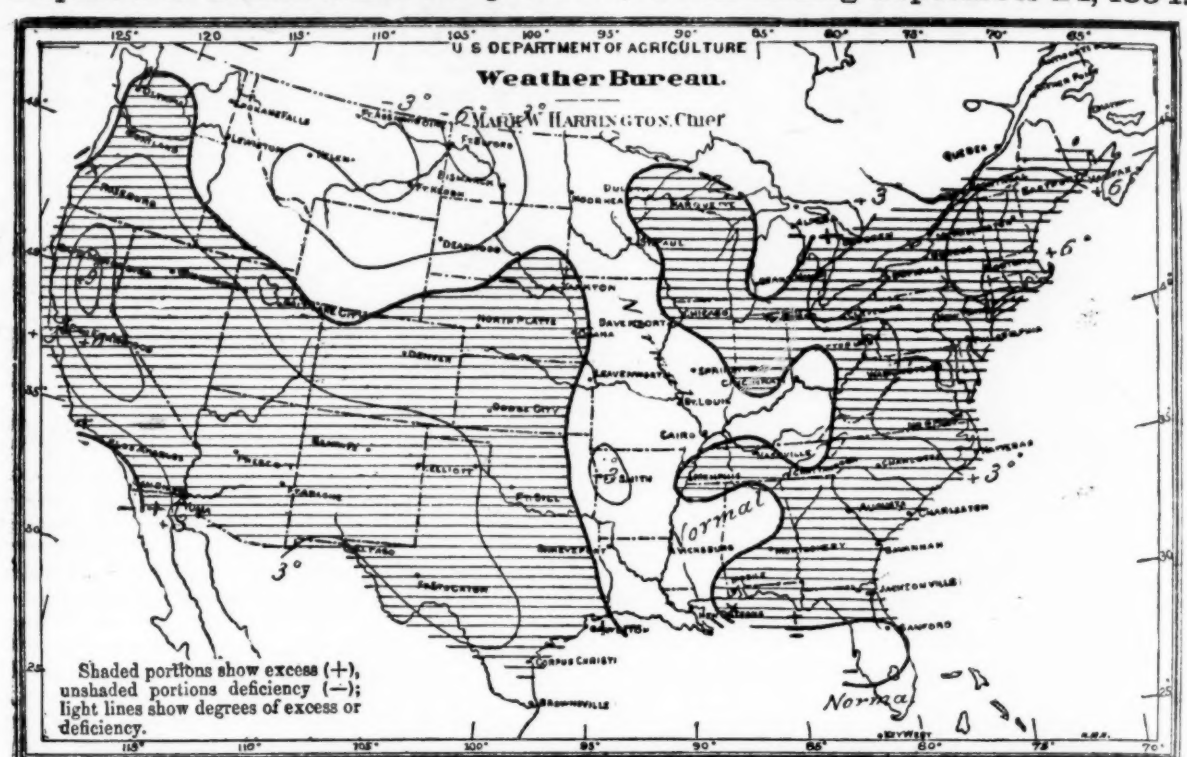
A B C in Cheese-Making is a short manual for farm cheese-makers in cheddar, gouda, Danish export (skinn cheese), brie, French cream cheese, and neutchdale; also, soft milk cheese, such as cottage, schmierkase, "Limburger" and "Emmentaler," and "why cheese" (Norwegian). By J. H. Monrad, Winnetka, Ill. Price 50 cents.

The famous musical composers have taken a hint from their literary brethren, and are securing an advance magazine publication for their compositions just as the authors publish their novels in serial form. The *Ledra Home Journal*, which was practically the first magazine to offer this outlet to composers, finds all the musical men rallying to it. Sir Arthur Sullivan announcing that the new song which he has just finished will be published in the magazine. Part's veteran conductor, Arrild, has given his new waltz to the *Journal*, while Reginald de Koven's new song goes also to the same periodical. Strauss has sent his new waltz to the editor, Sousa a new march, and Mascagni, of *Cavalleria Rusticana* fame, is writing a piano score.

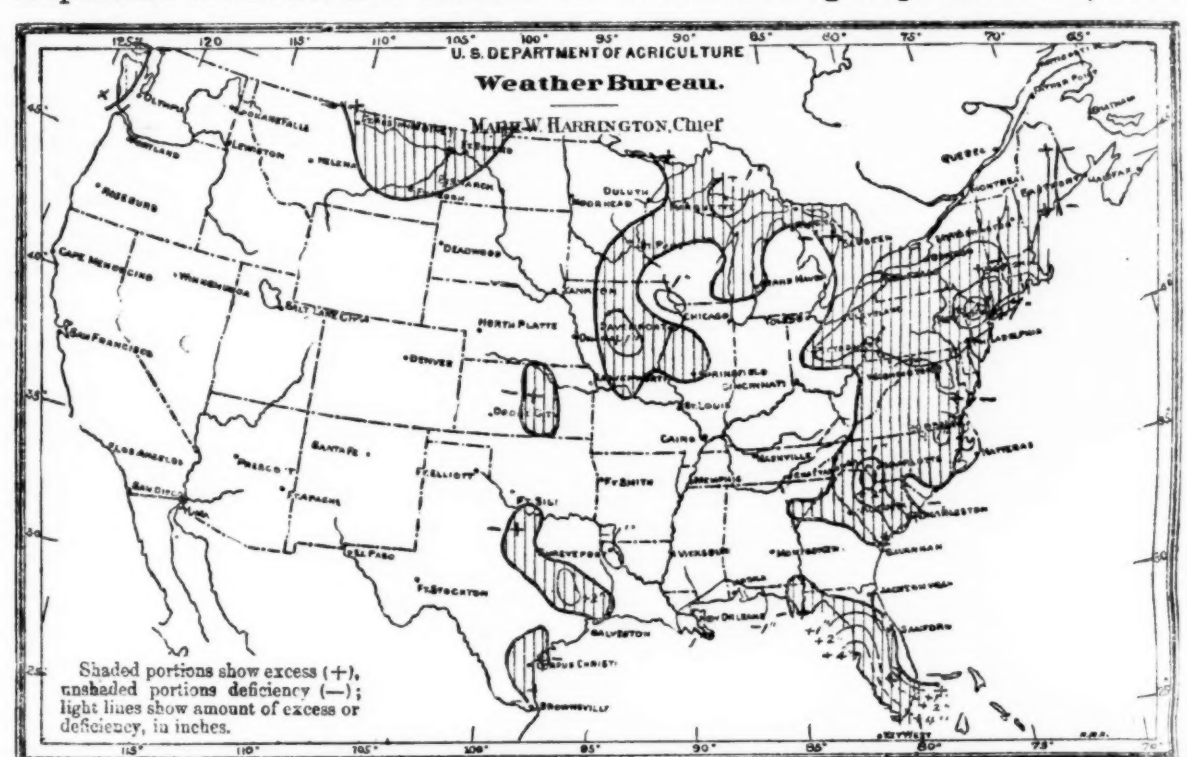
The fourth number of *Uclea* Son has telling colored lines on political, social and religious situations. It has many bright vignettes and bright, spicy leading matter. It is intensely American, and its motto is "American Institutions Must and Shall be Preserved." Published in the Schiller Building, Chicago. Price 10 cents.

A new journalistic venture has appeared in San Francisco, which seems to have abundant prospects for success. It is entitled the *Intellectual Pacific*, and states its object to be "An exposition of the material and intellectual resources of the Pacific Coast." It is gotten up in the finest style, with heavy satin paper, and an abundance of the highest grade of illustrations. Monthly; \$1 a year.

Departures from Normal Temperature, Week Ending September 24, 1894.



Departure from Normal Rainfall for Week Ending September 24, 1894.



WASHINGTON, D. C., Sept. 25, 1894.

TEMPERATURE.

Average temperature conditions prevailed during the week ending September 24 in southern Florida, throughout the Mississippi Valley, and in the lower portions of the Ohio and Missouri valleys. On the Atlantic coast north of Florida, and over the greater part of the Lake region the week was warmer than usual, the excess in temperature amounting to more than 3° per day northward of the Carolinas, and exceeding 6° in New England.

The week was also warmer than usual from Nebraska, Kansas, and Texas, westward to the Pacific, except on the immediate coasts of southern California, northern Oregon, and Washington, where it was slightly cooler than usual. From western Texas northward to southern Oregon the average daily excess amounted to more than 3° per day, and in interior portions and central and northern California ranged from 6° to 10°. Over the extreme northern districts from Minnesota, westward to eastern Washington, the week was cooler than usual, the deficiency in temperature exceeding 3° in Montana, Wyoming, and the Dakotas, a maximum deficiency of 6° occurring in western North Dakota.

Some unusually high temperatures occurred during the week along the southwestern border from western Texas to California, stations in Arizona and southern California, reporting 100° or more, while freezing temperatures occurred in Montana, the Dakotas, and northern Minnesota.

PRECIPITATION.

More than the usual amount of rain fell during the week in Florida and from the Carolinas northward to New England. There was also more than the average rainfall over portions of the Lake region and upper Mississippi Valley, eastern Montana, and over limited areas in Arkansas, Kansas, and Texas.

Abundant rains have fallen during the week generally throughout the Atlantic Coast States, and in portions of Georgia, the Carolinas, Pennsylvania, northern New Jersey, and southeastern New York the rains have been very heavy, nearly seven inches of rainfall being reported from northern New Jersey. Unusually heavy rains also occurred in portions of Texas and Iowa. In the States of the lower Ohio and lower Mississippi and upper Missouri valleys and throughout the Rocky Mountain and plateau regions less than the usual amount of rain has fallen.

No rain fell during the week in Nebraska, western Kansas, and throughout the region from Colorado, Wyoming, and Idaho, northward to the Pacific coast.

GENERAL REMARKS.

Upon the whole the week has been very favorable. Abundant rains have relieved drought conditions in all sections except in Nebraska and portions of Kansas, Minnesota, and the Dakotas. Fall plowing and seeding have progressed rapidly, and much of the early-sown winter wheat is up and looking well.

Corn cutting has been pushed vigorously, and in Minnesota husking has begun. Indiana and Wisconsin report that grain is turning out better than was ex-

pected. In Indiana, and for the most part in Illinois, the crop is beyond danger from frost.

The week has been very favorable for cotton picking, which has been pushed rapidly. South Carolina reports that nearly half of the crop in that State has been gathered.

On the Pacific coast the weather was especially favorable for securing crops and drying fruit. In Oregon the grain crop has been secured and harvesting is nearly completed in Washington. In California the weather was especially fine for gathering raisins, grapes, and beans, all other crops having been secured.

SPECIAL TELEGRAPHIC REPORTS.

New England.—Warm, with much sunshine; moderate rain in North, and from four to five inches in South; late frosts; garden crops, and grasslands improved wonderfully; harvesting well along; some variable, but generally cool crop of quality.

New York.—Warm, heavy rains in all sections; soil in fine condition on pasture, meadows, and all truck growing freely, but seedling slightly delayed in portions of the State.

New Jersey.—Heavy rains first of week retarded all farm work; some damage to late field crops by flooding; generally a dull week favorable for plowing and seeding on high ground.

Pennsylvania.—Conditions favorable for completion of seeding and development of late crops; soil in fine condition on pasture, meadows, and all truck growing freely, but seedling slightly delayed in portions of the State.

Maryland.—Soaking rains at beginning of week; conditions favorable for plowing, seeding, and harvesting; soil in fine condition on pasture, meadows, and all truck growing freely, but seedling slightly delayed in portions of the State.

Delaware.—Rainfall ranged from one-half inch in extreme southwest to three inches in valley and east-middle sections; drought in western and mountainous sections; crops generally well along; harvesting well along; soil in fine condition on pasture, meadows, and all truck growing freely, but seedling slightly delayed in portions of the State.

North Carolina.—Very favorable week, with temperature and moisture above normal; beneficial rains putting land in good condition for plowing and seeding; crops generally well along; harvesting well along; soil in fine condition on pasture, meadows, and all truck growing freely, but seedling slightly delayed in portions of the State.

South Carolina.—The rains of the week staid cotton cutting and harvesting; rice harvesting in progress; picking of cotton in progress; soil in fine condition on pasture, meadows, and all truck growing freely, but seedling slightly delayed in portions of the State.

Florida.—Temperature normal; excessive rains in northern portion but rainfall deficient in southern and western sections; good work for cotton picking and farm work generally; pasture good; conditions generally good; cotton will not make a full crop.

Alabama.—Dry and seasonable week, with warm, sunny days; cotton opening rapidly and much of it picked; sorghum making excellent progress; corn cutting and harvesting well along; soil in fine condition on pasture, meadows, and all truck growing freely, but seedling slightly delayed in portions of the State.

Mississippi.—Temperature normal; a week of clear weather has produced a decided improvement in crop prospects; cotton opening rapidly, and harvesting being pushed; corn cutting in a damaged condition; hay making has progressed well; small crops continue to prosper.

THE GARDEN.

Pickings.

Spinach is a profitable crop. Cut off asparagus tops before the seed matures, or you will have a lot of seedlings on hand.

The small-fruit plots, such as blackberries, raspberries, currants, etc., should be thoroughly cleaned out and fertilized in the fall.

Have no idle land, but let crops follow one another in quick succession. Delay in this matter will not only result in weeds, but in loss and dissatisfaction.

There is a disadvantage in late planting of strawberries. They are liable to be injured by alternate thawing and freezing, because of not being sufficiently rooted.

Alternately the drouth, blight, and bugs seem to play havoc with late potatoes, making them a very uncertain crop in many regions. Fertilizers are untrustworthy; stable manure causes scab.

Those who have sown their turnips in drills will get the best results. Cultivate thoroughly as long as the tops will permit. The old neglectful way will not do. Air and moisture are essential even to the hardy turnip.

In the fall is a good time to set out both rhubarb and asparagus plants, and there ought to be a good bed of both on every farm and in every garden, and well established and given good treatment they will last for years.

There is a field for a cross-bred race of gooseberries. Valuable introductions are Red Jacket and Columbus. Mildew may be subdued by growing on high soil, well drained, in rows running north and south. They should be well exposed to the sun.

Always plow garden land in the fall and leave no green perennial plants in vicinity of soil intended to be planted with cabbage, tomatoes, or other plants to which cut worms do damage. After that frequent plowing and close hunting seem to be the only way to eradicate them.

Many varieties of squashes may be preserved a long time after harvesting, with proper care. When first gathered, they should be stored in a cool, dry place. As the weather becomes colder, they should be removed to a room where the temperature is several degrees above freezing. Among the best squashes for preserving are the Hubbard and Turban.

There are three ways in which the truck farmer may dispose of his products. He may sell his produce direct to the grocer; he may build up a regular route, or he may have a stand in some market where his customers can always find him. Although the profits are not so great, the first method is most practical with the majority of farmers, as it requires less time, and the exposure to the weather is not so great.

If melon leaves are found to have dry brown spots and a dead appearance, the plant is afflicted with a fungus disease of the genus *Phyllosticta*, which reproduces by means of spores. It cannot be cured after having once started, but its attacks may be prevented by keeping the vines in a fast growing condition by means of liberal manuring and frequent cultivation. Preventive spraying with Bordeaux mixtures as for other fungi is also recommended.

A gardener of Geneva, N. Y., last winter experimented in forcing beans, with the following result: About 14,000 string beans were shipped from eight successive sowings in pots. The first sowing was made Sept. 29, the beans being shipped Nov. 2; the last sowing was on Feb. 3, and the beans shipped March 6. Eight-inch pots were used and six beans planted in each; 50 pots were sown each time. The best yellow bean was Flageolet; the best green, Early Warwick.

A simple plan has been given for preventing cabbages from bursting. It is to select the heads which show signs of bursting, and starting the roots by pulling the cabbage partially out of the ground or by cutting off some of the roots with a hoe. Pulling is about the best plan; that is, putting both hands under the head, pull until many of the roots are loosened and then the plant is pushed over to one side. This treatment effectively stops the bursting, and not only that, but the cabbage continues to grow nicely.

Early tomatoes make a handsome profit. Start early-maturing plants in February, in hot-bed or window-box. Transplant to make stocky plants, and set out as early as possible in soil made rich the year before. Apply nitrate of soda, cultivate frequently; staking will not be necessary.

In raising large fields of tomatoes for market, staking would no doubt be too much labor, but for the home garden the trouble is not great and the plan is very satisfactory. Walking among the plants is more convenient, and the fruit is kept clean and the garden has an artistic appearance, so that it is a pleasure to look on it or pass through it.

Line Will Injure Stable Manure. Please let me know if line is injurious to manure that contains stable manure or cotton seed; and is stable and lot manure injured by being exposed to sun and air for several days, as is practiced by some farmers before they drill their manure.—J. B. G. Goldsboro, N. C.

(Answered by H. B. Battle, Director, N. C. Experiment Station.) The addition of lime to stable manure is not advisable, because it will tend to decompose it and liberate the ammonia; it will also have this effect upon cotton seed. It would be best not to allow the stable manure to be exposed before applying to the land.

Thayer's Berry Bulletin, No. 19, for October, 1894.

If you would grow berries successfully in a Northern climate you must give them protection in winter.

Winter protection should be practiced in all localities where the temperature reaches zero or below.

Even with the most hardy plants, and in localities where they show no injury, the vitality is often impaired and the succeeding crop very much reduced.

With high cultivation a large and tender growth is produced, hence the greater necessity for maintaining as uniform a temperature as possible throughout the winter and early spring. There is safety only in protection.

The first warm days in March are especially trying. A protection of earth or other much carries them safely through the severest winter and beyond this critical period.

The best winter protection for blackberries, raspberries and grapes is obtained by laying them down and covering lightly with earth.

If plants have been mulched in summer with green clover, clean straw, or coarse manure, as they should be, use the mulching first, then cover lightly with dirt.

The process of laying plants flat on the ground before covering is an important one, and is easily acquired with a little practice.

If rows run north and south, commence at the north end, remove the dirt about four inches deep from the north side of the hill, gather the bushes in close form, with well protected hands and pull gently towards the north. At the same time a second man places his foot firmly on the south side of the hill and presses hard towards the north, bending the plants in the root until nearly flat on the ground.

If ground is hard or bushes old, the first man may use a wide two-inch fork to push the bushes carefully over, and the second man a potato fork instead of the foot, inserting the same deeply close to south side of hill, bending in the root as before, until nearly flat on the ground.

The first man then holds the bush down until properly covered; the top of succeeding hill resting close to side of preceding hill, making a continuous covered row. In spring remove the dirt carefully with a fork, and slowly raise the bush.

Two men should lay down and cover from one-quarter to one-half acre per day.

Canes are more flexible and less liable to break if this work is done soon after frosts, but may be done any time before ground is frozen.

With hardy varieties and in mild winters sufficient protection may be had by covering the tips only.

Grapes being more flexible are laid down without removal of dirt near the vine.

There is no more important work on the fruit farm or garden than winter protection, and there is no work more generally neglected.

Let it be done early and thoroughly. —M. A. THAYER, Sparta, Wis.

Fall Planting.

In the planting of raspberries and blackberries, Jos. Meehan says he would wish no better time than early fall. In an exchange he gives the following manner of treating raspberries:

"The situation selected for raspberries should not be a damp one, or the plants will continue growing late in the season, and will fail to ripen their canes. For the same reason I do not care to have the soil too rich. The plants are wanted to make a fair growth and to finish it about the close of summer, then, when winter comes, a sturdy, well-ripened cane results, which will not rot when buried up. I say buried up, because even in Pennsylvania it is found much the better way to bend the canes over to the ground and cover them with earth as winter comes, there to remain until the spring days come. For the same reason it is hardly worth while naming some as being harder than others, for one and all of them are better buried up. We look on Cuthbert as a particularly good and hardy sort here, yet one of the handsomest plantations of raspberries I ever saw was of this kind which I had buried up over winter.

"I would set the plants toward the close of September or early in October, getting all the root possible, setting them three to four feet apart each way, and cutting them down to about six inches above the ground. Tramp the earth in firmly about them, as the closer the contact of soil and root the better the prospect of success. Before winter comes mulch about the plants heavily with manure. Apply enough to keep frost from the roots if you can, as to keep the roots free from frost helps wonderfully towards success. If manure cannot be had, place an extra quantity of earth about them to be taken away in the spring, keeping in mind that it is placed there only to keep the frost out. Where snows are always to be looked for all winter, extra precautions will not be so important."

Cutting Hay in the Mississippi. A harvesting machine run along the bed of the Mississippi River near its center is the queer scene that was witnessed several miles above Alton, Ill., Sept. 4. The unusually low state of the river this year has exposed several hundred acres of sandbars lightly covered with alluvial soil about the little island of Eagle's Nest, and upon these has grown a crop of wild millet which stands four feet high, and so thick as to be almost impenetrable. It is clean, and would make a fairly good quality of hay. An enterprising Missouri planter noticed this, and conveyed a mowing machine and a team of horses to the island, and secured a large crop.

TUBERCULOSIS IN CATTLE.

Suggestions for the Diagnosis and Treatment of the Disease.

The results of investigations dealing with the serious question of tuberculosis in cattle, from both the economical and sanitary standpoints, are embodied in an important report of the Agricultural Department prepared by Theobald Smith, Chief of the Animal Pathology Division. It reviews the examinations, discusses the history and character of tuberculosis, and presents many valuable suggestions for the diagnosis and prevention of the disease. The report is in substance as follows:

"In making tests the temperature of the inspected animal should be taken every two hours, at least six or seven times, before making the injections, as without a knowledge of the variations before the injections it is frequently impossible to estimate correctly the value of the elevations of temperature after the injections. The variation in the temperature of an animal during the course of the day is frequently so great that if the variation is not determined, and the temperature is taken only once before a tuberculin injection, it is merely a matter of chance if a high temperature, natural to the animal and independent of the action of the tuberculin injection, is not erroneously taken for a reaction. The most convenient place for an injection is the side of the neck, where the skin is thin, and a large, strong needle gives much more satisfaction than a small, fine one. Seven or eight hours after the injection the temperature should again be taken, and from then on every two hours, until a decided reaction, continuous during several hours, has occurred, or until 18 or 20 hours have passed since the time of the injection."

The report suggests that a careful inspection of all dairy herds, with the object of detecting and removing all advanced cases of tuberculosis, especially of cows with diseased udders, would probably exclude the sale of most infected milk. Observations show that occasionally the presumably mixed milk of dairies may contain enough tubercle bacilli to prove fatal to guinea pigs in two months.

To attack tuberculosis as it exists at present, continues the report, "is a most difficult problem, and no single measure, however sweeping, is likely to be successful. The present wide dissemination of the disease and its prevalence among other domesticated animals, as dogs, cats, horses, and, above all, its prevalence among man, makes the complete extinction of the malady an unrealizable problem. Infection through the air is the most serious problem to be dealt with. A question of such practical consequence is the effect of repeated infections. That cattle may be infected more than once is self-evident. The more frequent the infections the more rapid the disease and the speedier the danger of the one case to other animals. The fewer the tubercle bacilli in the air the more reduced the danger. It is highly probable that the cattle may, under conditions, inhale a few tubercle bacilli without permanent injury. The importance of reducing the amount of infection in a herd by all possible means and keeping it permanently reduced is one necessary condition for the successful eradication of tuberculosis."

The summarized important facts bearing on tuberculosis of the lungs in cattle are: Primary infection through the air is more frequent under existing conditions than any other mode of infection; extent and rapidity of the disease depend, at least in part, upon the number of tubercle bacilli inhaled either within short and long periods of time; tuberculosis of the lungs is not necessarily associated with any other recognizable lung affection as a pre-existing, favoring condition.

Tuberculosis of the liver is probably, in most cases, a result of a food infection. Tuberculosis of the serous membrane seems to cause least danger to the animals affected. It takes place principally by the escape of bacilli from some forms of the disease situated under one of the serous coverings, as lungs, liver, intestines and associated lymph glands.

Generalized infection. It does not appear probable that organs are invaded to any extent by tuberculosis starting on their serous covering. The tubercle bacilli appear to be usually carried in lymph channels with the current. But a case of evidently retrograde movement of the bacilli has been noticed. The virus of tuberculosis does not vegetate in the blood, its presence there being accidental. In the more advanced stages of the disease infection of the blood may occur repeatedly.

Generalized infection may be recognized by the discovery of foci of disease in the organs not accessible to the virus in any other way than through the circulation or in the lymph glands of such organs. Tuberculosis of the subcutaneous lymph glands and of those situated in the muscular tissue of the trunk and limbs are universally accepted as indicative of the generalized disease. Such glands may be infected from without, but infection through wounds of the skin is quite rare. Generalized infection, both chronic and acute, has obtained considerable attention owing to its important bearing on the infectiousness of meat and milk. In all cases of generalized disease the milk should be regarded as dangerous. The difficulty from the practical standpoint lies in the recognition of the generalized infection during life. With the meat the question is simple, and resolves itself into thorough inspection of every carcass at the abattoir by a trained inspector, and with the living animal there are only a few guides, such as the condition

of the udder lymph glands or enlargement of some of the superficial lymph glands.

SEATS OF THE DISEASE.

The region of the throat and the small intestines are more likely to absorb tubercle bacilli early in life than later on, while the lungs seem to become with age the preferred seat of the disease. Demonstration of this assumption is complicated by the fact that calves are more exposed to food infection than adult animals, because of the dangers of tubercle bacilli in the milk. There is every reason to believe that most of the tuberculosis of cattle is not demonstrated at or before birth, but is contracted by contagion later on in life. Cattle owners should pay special attention to the condition of the udders, disease in which is particularly dangerous, because the milk at first appears normal for some weeks, and therefore would be used with impunity. With this disease the only danger to other herds lies in direct contact, or in the transfer of a diseased animal or of milk from such an animal. The greatest danger exists in the immediate surroundings of the infection, and loses itself as the distance increases.

In order to effectually control any infectious disease it is of the utmost importance to recognize in the living animal not only advanced stages, but even the slightest infection. It is essential that the tuberculin test be repeated no later than after an interval of six months, so as to reveal cases not detected at the first test.

The precise composition of tuberculin is unknown, but with further improvements in the means of determining its exact qualities, and the methods used to test its strength and purity, more accurate results from tuberculin injections can be expected.

GENERAL SANITARY MEASURES.

In recommending sanitary measures the report concludes:

Cattle owners should become familiar with the general nature of tuberculosis, thereby lifting themselves above the plane where quackery and specifics abound, and understand precisely what to expect after the disease has entered the herd and how to meet the demands of public health. Sanitary precautions should begin with the removal of diseased and suspected animals. Attention should be paid to the stables, and owners should look out for the inhalation disease so common in tuberculosis cases. Each animal should have plenty of room, always occupy the same place, and be housed as little as possible. The infection of food and water should be cautioned against. Much of the difficulty which arises when radical measures for the suppression of the disease are discussed is the economic value of the cattle products—the meat and milk. The investigations show that the milk of tuberculosis animals is not so frequently infected as supposed. Milk of animals in the earlier stage of the disease and with perfect udders does not contain tubercle bacilli. Only those showing signs of labored breath and emaciation should be gravely suspected and their milk excluded at once from sale. The relative danger of the stable air to human beings is another phase of the question that should not be overlooked.

Why Pull Your Corn Fodder? The above is the title of a bulletin (No. 104) just issued by the N. C. Agricultural Experiment Station. It treats of a very important subject and shows that there is a great loss in the present method of pulling fodder and leaving the stalks to rot in the field. Nearly one-half of the total value of the corn plant is lost by pulling fodder according to the present plan.

The simplest way to get the most food out of the corn crop is to cut close to the ground with short-handled hoes at about the time the fodder would be pulled, and cure in a silo. Lacking the silo, cut the corn in the same way a few days later, or about the time fodder is generally pulled, and shock in the field. Put 400 to 600 pounds in a shock, and stand the butts out open enough to make the shock stand firm and let in the air to dry the corn. Bind the tops tight to hold together and keep out rain.

When cured, shock out the ears, and cut what is left, known as stover, (the stalks, blades and sheaves). Cut in one-half inch lengths with ordinary hand feed cutter, or better, power if you have it. Feed to cows or work teams with cotton seed meal, wheat bran, or such other nitrogenous materials as can be most readily obtained. For nearly balanced ration, feed one pound of meal to four of stover and two of oat straw. The stover alone, fed freely, will support an animal at rest and not giving milk.

Great Falls, Mont., is rapidly growing as a wool market. Nearly 4,000,000 pounds have been marketed at that point so far this season.

THE AMERICAN FARMER, Washington, D. C., OCTOBER 1, 1894.

Taste

has lost lives. In former years people wouldn't take Cod-liver Oil on account of its bad taste. Now we have

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FARM AND HOME STATISTICS

Value of Town and Country Dwelling Properties.

The Census Office has made public the principal results of the investigation of farm and home proprietorship which was made in all of the States and Territories. This is the first investigation of the kind ever conducted for this or any other country.

Of the 12,690,152 families in the whole country, 47.80 per cent. own their farms and homes and 52.20 per cent. hire, and of the families owning their farms and homes, 27.97 per cent. have incumbrances thereon and 72.03 per cent. no incumbrances.

Among 100 families, on the average, 52 hire their farms and homes, 35 own free of incumbrance, and 13 own subject to incumbrance. The number of resident owners of land in the United States is 6,066,417, plus such a number of land owners as may be living in tenant families.

The farm families number 4,767,179, of which 65.92 per cent. own their own farms and 34.08 per cent. hire, while of the owning families, 28.22 per cent. have incumbrances on their farms and 71.78 per cent. have none. In 1880, 25.96 per cent. of the farms were hired. Among 100 of farm families, on the average, 34 hire their farms, 47 own free of incumbrance, and 19 own subject to incumbrance.

The results for 7,992,973 home families are that 36.90 per cent. own their homes and 63.10 per cent. hire, while of the owning families, 27.70 per cent. own their homes subject to incumbrance and 72.30 per cent. free. One hundred home families, on the average, contain 63 that hire their homes, 27 that own free of incumbrance, and 10 that own subject to incumbrance.

The cities and towns of 8,000 to 100,000 population are aggregated for the 1,749,579 home families that live in them, and of their families 35.96 per cent. own their homes and 64.04 per cent. hire, while of the owning families 34.11 per cent. own subject to incumbrance, and 65.89 per cent. without incumbrance. In 100 home families, on the average, 64 hire their homes, 24 own free of incumbrance, and 12 own subject to incumbrance.

In the cities that contain over 100,000 population, there are 1,948,834 home families, of which 22.83 per cent. own their homes, and 77.17 per cent. hire, while of the owning families 37.80 per cent. own subject to incumbrance, and 62.20 per cent. free of incumbrance. In 100 home families in these cities, on the average, 77 hire their homes, 14 own free of incumbrance, and 9 own under incumbrance.

Among the cities having 100,000 population and over, New York has the highest percentage of home tenancy, namely, 93.67; Boston is next, with 81.57 per cent.; Brooklyn, third, with 81.44 per cent.; Jersey City, fourth, with 81.20 per cent., and Cincinnati fifth, with 80.82 per cent. The percentage for Baltimore is 73.94; for Buffalo, 60.03; for Chicago, 71.24; for Cleveland, 60.90; for Denver, 70.69; for Minneapolis, 68.86; for New Orleans, 78.51; for Philadelphia, 77.24; for St. Louis, 75.53; for St. Paul, 59.80; for San Francisco, 78.46; for Washington, D. C., 74.80. The smallest percentage—56.02—represents Rochester, N. Y.

To bring the urban population into contrast with the non-urban population, totals have been obtained for 4,224,560 home families living outside of cities and towns of 8,000 people and over, and of these families, 43.78 per cent. own their homes, 56.28 per cent. hire, while of the owning families, 23.09 per cent. own with incumbrance, and 76.91 per cent. own without incumbrance. Among 100 of these home families, on the average 56 hire their homes, 34 own free of incumbrance, and 10 subject to incumbrance.

The value of the 1,696,890 farms and homes subject to incumbrance, is \$5,687,298,069, and the incumbrance on them is \$2,132,949,563, or 37.50 per cent. of the value. The \$886,957 farms subject to incumbrance are worth \$3,054,923,165, and the incumbrance is \$1,085,995,960, or 35.55 per cent. of the value. The 809,933 homes subject to incumbrance are valued at \$2,632,375,904, and the incumbrance is \$1,046,353,603, or 39.77 per cent. of the value.

The cities of 8,000 to 100,000 population have 214,613 incumbered homes, occupied by owners, worth \$739,846,087, with an incumbrance amounting to \$292,611,974, which is 39.55 per cent. of the value.

In the cities of 100,000 population and over the value of the 168,159 incumbered homes occupied by owners is \$934,191,811, and these homes are incumbered for \$393,029,833, or 42.07 per cent. of their value.

In the country outside of cities and towns of 8,000 people and over, the value of the 427,161 incumbered homes occupied by owners is \$958,337,006, and the incumbrance is \$361,311,796, or 37.70 per cent. of the value.

Of the incumbrance on farms and homes 22.20 per cent. bears interest at rates less than 6 per cent., 34.44 per cent. at the rate of 6 per cent., 43.36 per cent. at rates greater than 6 per cent., and 10.96 per cent. at rates greater than 8 per cent.

The average value of each owned and incumbered farm in the United States is \$3,444, of each incumbered home \$3,250, and the average incumbrance on each of the farms is \$1,224, on each incumbered home \$1,203. The interest charge for one year on the incumbrance on owned farms and homes is \$141,910,106; on the owned and incumbered farms, \$76,728,077; on the

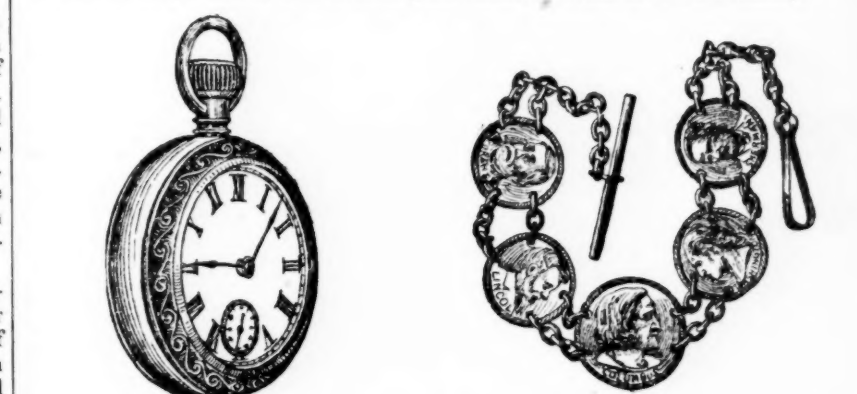
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Figure 1. A schematic diagram of the experimental setup. The subject is seated in a chair and views the target through a video camera. The target is a small object (e.g., a ball) that is suspended in the air. The subject's hand is positioned near the target. The video camera is positioned above the target and the subject's hand. The video camera is connected to a computer, which displays the video feed on a monitor. The subject is instructed to move their hand towards the target. The video camera captures the movement of the hand and the target. The computer processes the video feed and displays the target's position on the monitor. The subject is then instructed to move their hand towards the target again. This process is repeated until the subject has moved their hand towards the target a certain number of times.



UNCLE THAN'S OBITUARY.

Up a better obituary than that myself without half trying."

"Hold on, mar; I'm comin' to that," replied Uncle Than, "don't be in such an all-fired hurry. An obituary is a thing ye've got to go kinder slow with. It's more fittin'."

"Nathaniel was born in Brattleborough, Vermont, in 1817," he read on.

"Wa'n't nuthin' of the kind," answered Aunt Alciny, "twas 1815. Tryin' to make yerself out younger 'n ye be, I see."

"That's so," rejoined her husband nervously. "I don't see how I come to make such a mistake."

"At the tender age of nine, deceased removed with his parents," continued the "deceased," to New York State, and after various changes settled in Durkney Point, then a howling wilderness."

"Howling?" ejaculated Aunt Alciny; "I'd like to know! What howling?"

"Wildcats, mar," suggested Uncle Than, nervously.

"Wildcats don't howl," said his wife contemptuously; "they yowl."

"Wall—yowl," repeated Uncle Than, rather impatiently. "I don't know as there's any great difference."

"Than!" said Aunt Alciny, waving her pipe emphatically, "have it right. Ef ye're bound to have an obituary, don't for mussy's sakes have any howling wild cats in it for folks to laugh at."

"When deceased was twenty he wooed and wed Alciny Griggs."

"Wood!" said Aunt Alciny, with infinite scorn. "Wood! Where'd she get such a silly word? Sparked good enough for folks like us."

"I'll change it, mar, ef ye'd like it better," said Uncle Than, eager to propitiate his critic.

"Wal, I should think ye'd better. Wood!" Aunt Alciny gave vent to one of her most disdainful snorts.

Uncle Than read on to the close of his life and followed with great relish the details of his taking off. He hesitated over "the stroke" which killed him.

"It might be a stroke," he said, "an' then again it might be rheumatism or consumption, mar, or fits."

"T'won't never be no consumption, Than'l, with them lungs of yore'n," stated his wife; "more likely a stroke."

"Wall, that can be fixed up afterwards," rejoined Uncle Than; "an' now, mar," he add'd, after going over the description of his funeral and the list of his pall bearers, an item he had suggested that he might possibly outlive them all, "now, mar, I call that a mighty good obituary, don't you?"

"No, I don't," said Aunt Alciny, tartly. "I shouldn't have said nuthin' bout your donations to the church—"

For the very next day Sophia brought home the obituary. She intended to remain to tea and read it aloud to the old couple, but as this suggestion met with no encouragement from Aunt Alciny, she framed an excuse for a sudden departure and retired, rather abashed, from the presence of the old woman, whose face wore a more sardonic smile than usual.

But Uncle Than could scarcely wait until the evening chores were finished, so desirous was he to see his virtues presented in ink. With nervous hands he unfolded the manuscript, tied up, with lugubrious propriety, in narrow black ribbons, and clearing his throat with a resonant "hem," began to read aloud. Meanwhile Aunt Alciny smoked.

"Another ripe sheaf has been garnered," so ran the obituary, "another shock of corn has been gleaned."

"I s'pose that's you," dryly interrupted Aunt Alciny; "you're the shock of corn and ripe sheaf. Humph! you look more like one of them dried bull-rushes Priscilla Dean's got stood up in the corner of her parlor. Wal, go on."

"We are again called upon to mourn the untimely loss of a prominent citizen," Uncle Than's smirked his lips now and read with the greatest satisfaction, "devoted and faithful father and husband and an upright pillar of the church."

"It's a judgment," murmured Aunt Alciny, "come on account of his vain-glory. He's got so set up since that air obituary was writ, there ain't no livin' with him. He's growin' so dresy an' sassy I dunno what on earth I'm goin' to do."

The climax of Uncle Than's riotous living came when he saw Miss Priscilla Dean home from prayer-meeting one Thursday evening. Durkney Points was horrified at this lapse from social standards and tongues wagged fiercely on the matter, which became at length so great a stench in the nostrils of the neighborhood, it was deemed necessary that a committee from the church should call upon Uncle Than and show him the error of his ways. So it came about that Deacon Alvin Hoosier and brethren Ezra Applebee and Amri Goodrich called on Uncle Than one dreary December afternoon, wearing their best clothes and expressions of great melancholy.

Uncle Than received them cordially and ushered them into the sitting-room where Aunt Alciny sat, silent and stern, for she at once suspected the nature of their visit. But Uncle Than was perfectly at ease and chirruped away about the crops and the church until Deacon Hoosier said, with a degree of mournful solemnity, "Brother Button, we hain't come to talk about no crops nor yet the church, but about your own conduct."

"My—my conduct?" faltered Uncle Than.

"Yes, we are grieved with ye," returned the deacon, "while something like a groan escaped Brother Amri."

"I dunno's I've done nuthin' I'm ashamed of," announced Uncle Than.

three times, and on that account was regarded with considerable awe by her townsfolk, as one having authority and vast experience. She loved to talk, pray and write.

"She got the gift of gab," said Miss Priscilla Dean, who, it was suspected, cherished envy, hatred, malice and all uncharitableness toward Sophia for the sake of those three defunct husbands, "an' thar hain't no one that can address the throne of grace an' give the Lord more news in 15 minutes than Sophi Sweezy kin."

This woman of parts set speedily to work on Uncle Than's obituary. The good man eagerly supplied the necessary data and information, and awaited the result with ill-concealed anxiety. One evening as he sat enjoying his pipe after the chores were finished, he suspended puffing for a moment to murmur: "I do wonder, mar, how Sophi Sweezy is a-gettin' on with that air obituary of mine."

As a rule Aunt Alciny contented herself with an ejaculation—something between a sniff and a snort—which was supposed to convey contempt. One night, however, after carefully knocking the ashes from her pipe upon the hearth, she coolly remarked:

"Of all the vainglorious animals, Than'l, I ever see in my life, you are the worst. Ye'd better beware. Satan is a-tentupin' on yer—a tryin' on ye. Ye're a gittin' puffed up with a sense of importance. Ye're a gittin' to feel big—and I blame it all on that obituary. I wish the plagued thing had never entered your head. But I wash my hands of it. Ef any judgment overtakes ye, don't expect no sympathy from me, for I'll be along of that obituary ye an' Sophi Sweezy are a-cookin' up betwixt ye."

Thus ended Aunt Alciny's expostulations. From this hour she ceased to be a prophet and became instead a critic.

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rather testily. "What air your charges?"

"We don't bring no charges yit," said the deacon, with considerable emphasis on the last word. "We only want to reason with ye—to open yer eyes to yer transgressions."

"If ye can do that," stated Aunt Alciny from her corner, "ye can do more'n I can."

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A Domestic Discussion.

A Fair Example.

A Piazza Episode.

Simplicity of English.

A City Boarder.

Where He had Been.

Time Working Wonders.

Her Brilliancy.

Mistaken Charity.

During the Campaign.

A Brunet's Advantage

Had the Fun.

A Greater Proof.

Hence These Tears

Free America.

. Barnes (of New York)—Ye

THE DAIRY.

Skimmings.

The Best Roots for Cows.

Grading of Butter.

CLASSIFICATION

Grease butter.
The qualities and conditions necess

THE ORCHARD.

Cullings.

THE APPLE CROP.

Necessity of Care in Packing and Shipping.

Garden Notes

EDITOR AMERICAN FARMER: Among the

**ATTORNEY AT LAW AND SOLICITOR OF
AMERICAN AND FOREIGN PATENTS.**
Established 1866. Send for 67-Page Pamphlet

THE AMERICAN FARMER

Established 1819.

WASHINGTON, D. C., AUGUST 1, 1894.

75th Year. New Series.—No. 60.

RAMIE,

Or "Chinese Nettle," "China Grass," "Rhea," Etc.

(Interview with Mr. S. H. Slaughter.)

THE CULTIVATION OF ramie in this country is a very important subject, and probably no one in the United States is more familiar with its value and the various uses to which it can be put, and also its cultivation, than S. H. Slaughter, of San Francisco, Cal., who is now in Washington, D. C., making arrangements to start a factory in the United States to convert the ramie fiber into goods and thus create a market for it, which he claims is necessary to be done before it can be successfully raised in this country.

He says ramie is a species of nettle, but thornless. There are three to five different varieties, all suitable for this climate, but they vary in excellence in the market from one to three cents per pound, the best, which I recommend, being worth six cents a pound net here, in the rough as it comes from the de-corticators, dried and baled.

Decortication itself is of a very simple nature, being to break, strip, or peel the bark from the wood, to separate the woody matter from the bark and fiber, or "ribbons," which must be done as fast as leafed and cut, or on the same day of cutting. It can be done to pay, by flail, treading with horses, or flax break, and shaken out; or, more properly in these days, with a machine run by horse or steam power, and with four to six men working two acres a day, easily. One machine will run through 120 acres in two months, and keep a gang of men busy all the summer through. Ramie will grow in about that time if well supplied with water-irrigation or artificial moisture.

Ramie should be cut green when about four or five feet high, and when it first begins to brown at the bottom of the stalks. Ramie will not rot like flax or hemp, and thus must be broken green before the gum or glue sets to the stalks. It should be run from the decorticator on an endless wire carrier through a drier, and baled at the exit for shipping to the factory, where it is, by processes, cleaned and ungummed and prepared for carding and spinning. It is excellent to knit or weave into goods of superior quality, pure or mixed with wool, for casimires, woolen and worsted fabrics.

Ramie fiber is of a very firm texture, and of uneven lengths, from two to six inches, or three to nine inches. It is a flat, hollow ribbon, and thus takes dyes in all shades of the brightest colors, as well as silk. It is not of such a glossy nature as common silk, but par-takes of what is called dead silk in black, which all ladies know is most de-sired in expensive goods. Silk is wound off the cocoons from 800 to 1,000 yards long, and doubled in the winding seven strands; while ramie, being short, must be combed or carded and spun like raw silk, or broken silk, and therefore is not mixed with fine silk in the way sometimes spoken of, but made into thread, is used to mix in the body, the strongest parts needed. For the warp or filling, and sometimes for the body of the goods, silk may be used for the raised glossy figures or flowers, giving a beautiful contrast and exquisite shading. In wool mixtures it can be cut or graded to the even lengths and combed or carded and spun as a complete mixture, benefiting the wool by its superior strength, gloss, and finish, the wool making the nap and warmth, the ramie, alone, being porous and cool for summer wear.

Ramie is not adapted to be worked on linen, hemp, cotton, or jute machinery. It is estimated that some \$30,000,000 worth of worsted and much more wool and woolen goods, as well as of \$19,000,000 worth of silk, is imported into the United States annually. Ramie fiber, that can be grown in this country, can take the place mostly of this and largely with our own product of wool and silk equal or excel much of it in durability and finish, besides for all other purposes in ramie goods pure, mixed silk, and other ways, I have no doubt, to amount to much more. There is no end or limit to the possibilities, ap-parently, of the uses to which it can be put. Why should we not hasten to reap the direct benefit as well as the inci-dental impetus it would give to all other enterprises, employments, and home market?

Ramie is now grown in China, Japan, India, Mexico, Cuba, Hawaii, Samoa, West Indies, Guatemala, Columbia, and Brazil, and (in the United States), in Florida, Georgia, Alabama, Louisiana, Texas, California, and Washington in small quantities. It is also grown in South

France, Italy, and Hungary. It is worth in China \$50 to \$80 per ton, cleaned by hand. This is done there by scraping the pellicle off the outside of the stalk, cut green, then peeling the bark, and with a bamboo stick rubbing out the mucilaginous gummy matter over a log, and repeated boiling, washing, and drying on scaffolds or roofs of their houses. For export, it is only partially ungummed. For their hand weaving they strip this partially ungummed fiber into threads as long as possible, contain-ing, of course, thousands of fibers held together with gum, (saving the operation of combing and spinning,) which they fasten, stick or tie together end to end, making long threads in imitation of silk, which they weave into goods by hand, then boil and bleach out and color in the piece.

This primitive way of working, which can only be done with the cheapest of labor, has deceived most of our ex-perimenters into the belief that the fibers were long as the stalk, like flax and hemp, when in fact they are hollow ribbons or veins, running between the leaves, of different lengths, according to growth of stalk, from two to six, or three to nine inches, and run from the bark to the wood all the way along, making it such an enormous grower. Want of knowledge of this, of course, prevented success in their making ma-chinery to prepare it to manufacture. But now that we have scientifically in-vestigated the fibers before we undertook to build machinery, and found out just

about an inch, or let it come almost or quite to the surface if the ground is not mellow and sandy and is moist to the surface, or liable to bake. Cultivate well between the rows until the sprouts are up two or three feet high, when layer out to cover the ground in a bed four feet wide, leaving a space two feet wide between the beds to use and cultivate, from which you can procure roots, that spread out into these spaces, to re-plant or sell, without disturbing the beds. You will find it will pay you for some years to come to raise roots to sell, as a little demand will absorb all now on hand, and I have no doubt the price will double or treble before the rush is supplied.

The first crop after layering can be cut with sickle by hand, and all the poor or branchy shoots can be layered to fill up any vacancies, or cut into cuttings and planted like grapevine cuttings.

Now these two-foot paths can be kept open and used for cultivation, or, after the four-foot beds have become solid, can be allowed to spread full.

I advise this plan, as a four-foot bed can be grown solid thick sooner than six feet, and after that can be easily ex-tended. When roots become plentiful and cheap you can plant thickly all over the ground at first planting if you choose. It will take to plant an acre this way 2,500, 6 feet by 3 apart, or 7,500, 6 feet by 1 apart, making the first cost enough on a large scale, and with layering and cuttings will soon

be returned with little trouble, so that nothing but the pure fiber need be taken permanently away.

Now, if an overgrown stalk should be cut, weighed and burned to estimate the loss, the result multiplied by the number supposed to be on an acre, it might be that "50 tons per acre" might be estimated, which would give a very erroneous impression from the real facts. I think the leaves and wood being returned, might add to the soil, together with irrigation and the air, all, or nearly all, removed in the fiber, and possibly more, in some cases at least. Something is taken from the air and water, and more brought up from the subsoil, or below. At any rate, I have seen as fine stalks on 10, 15 and 20-year-old-grown patches of ramie (that I have been told had not been fertilized and not much watered) as I could wish to raise. About five tons green stalks can be expected off an acre each cutting, making a thousand or more pounds of fiber, or three or four thousand pounds in a season of three or four cuts.

Ramie fiber must not be bleached before sold to or used in the factory, as it needs different treatment for different uses, and you must not be deceived by long, fine, bleached or un-bleached samples, as there is no practicality in them. Ramie is not ungummed if long, and cannot be used in that condition except by hand, and then must be prepared while green and fresh, by hand. We want no hand work, and cannot compete with foreign labor in that way. So do not be deceived by gaudy showings.

Bales of it have been made long and shipped from the South, 12 to 20 years ago, and found unsalable for profit to this country, and spoiled for their uses in Europe by hand or otherwise. We want plain, practical, working ma-terial.

It must be thoroughly and econom-ically, by two separate processes, cleaned and ungummed in the factory, and then it is as free and pure as wool, camel's hair or alpaca, and cut to even lengths, or separated into two, four and six to nine inch lengths, will comb or card and spin as readily by machinery, and if properly done is of full strength and gloss. The farmer, except for curi-osity or satisfaction, does not need to be a manufacturing expert to pass on the machinery or fiber. He simply, neces-sarily, wants to be satisfied that he can put into bales and sell the raw material, and roots maybe, enough for several years to pay him for planting, raising and marketing, as well as or better than anything else he can raise, and that he will get a better market for his other products, and be able to buy a superior article of goods for less money than is possible without it. If he can make \$80 to \$100 per acre on a large number of acres for several or many years, and never less than \$50 clear, and double or quadruple his market, and that at home, instead of chances abroad; get his goods for less than half or one-fourth of the price he now pays; get a genuine, durable article that will wear four times the length of time the adulterated article he now pays a big price for; builds up his country, makes his property valuable, I think is worth little effort and faith, even if there is a good deal of work and maybe some few mishaps to start with.

New Way of Raising Potatoes.

The new method of growing potatoes in the South is a valuable innovation on the old way. The first crop, planted in March, is now ripe. Seed from this first crop is planted in July and August. The seed selected is planted in beds thickly, in the same manner as sweet potatoes in the Spring for sets. The cuttings are made quite thin and planted closely in the beds and lightly covered with soil. As soon as they sprout they are planted in trenches and covered lightly first, the covering being increased as the plants grow. The vines are left to grow until they are cut by the frost. They are then removed and the ground covered with litter to keep out the frost, and the potatoes are left in the ground until Spring.

This new method is worth millions to the South. It gives to it the whole market for seed potatoes for the future. For this second-crop seed keeps without sprouting until late in June or July, and thus supplies the Summer markets of the North with the best kind of potatoes, uninjured by growing, and crisp as when newly gathered. And, in addition, when taken from the ground in Janu-ary, they sell in the Northern markets for the prices of Bermuda-grown ones, and are as fresh and better than they are. This is only one of the new re-sources of the South arising from its mild climate that afford profit to the in-dustrious and enterprising farmers. But it is by no means an insignificant addi-tion to the income of the Southern farmers.—*New York Times.*

cover the beds. If planted this Spring a scattering crop can be cut in the Fall from the layers, and the next season three or four fair crops can be ex-pected, and the next year your most sanguine hopes ought to be realized.

Ramie is not a noxious weed in this country, does not spread over the country by seed, is not hard to eradicate, dies with drought, flood, or plowing out to sell the roots or replant. As to its injury or drain on the soil, I must say that it has been over-estimated, as the comparisons have been made with grain and fruit that grow and ripen grain, wood, fruit, seed or pits, which makes the greater drain and from the surface. The ripening of seed or pits, hardening of stem or wood, is much more exhaustive of the soil than the first or green part of the growth. Ramie should be compared with alfalfa more properly, but has some very im-portant advantages over that also. While alfalfa roots deep and draws its substance not mainly from the surface, but deep down in the subsoil, and far into the subterranean depths of moist-ure, it does not materially exhaust the surface, though in cutting green it is all removed, stalk, leaves and all, sold or used, hardly, if ever, returned even in manure if fed on the place; yet, if ripened for seed it exhausts the soil much more; while with ramie the roots also go down deep, not only one tap-root, but many, each stalk supplying its own, every joint or piece supplying them if detached from the mother roots. Ramie is always properly cut green, all the leaves, about two-fifths of the whole weight, being stripped and left on the field; the wood and juice is separated and burned in dryers, and the ashes

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There is almost no prominent inju-ous insect in whose economy natural enemies play a more important part than the army worm. We have said above that in the great majority of cases actual destructive measures against army worms which have once taken full possession of a grass field are hardly necessary. This is because of the fact that generally not more than one worm out of a thousand escapes death from parasitic or predaceous insects. Where the army worm follows its normal habit and feeds only at night, remaining hid-den during the day under the surface of the ground at the base of some tuft of rank-growing grass, it is protected from these natural enemies, but when the migratory instinct drives it forth and it marches unprotected during the day, the swift-breeding tachina flies attack it at once, multiply most rapidly, and in connection with its other parasites and with the predatory ground-beetles, re-duce its numbers once more to the non-injurious point. We have said this is generally the case; there may be excep-tions, but we have never seen one. It is important, however, for the farmer to be able to recognize the appearance of a parasitized worm, as in this way his confidence in the future may be re-stored.

We show at Fig. 3 the head and front segments of an army worm bear-ing eggs of the red-tailed tachina-fly (*Nemora leucanie*). The eggs are white, oval, less than one-sixteenth of an inch long, and are glued fast to the skin of the caterpillar, usually on the back of the front segments. From half a dozen to 50 or more of these eggs may be attached to a single caterpillar, and from each hatches a maggot which penetrates the body of the army worm and ultimately destroya it, unless the caterpillar should happen to cast its skin so soon after the eggs are laid that they do not have time to hatch. The adult tachina-fly resembles a rather large house-fly, except that it has a red tip to its abdomen. Hun-dreds and thousands of these flies are usually seen buzzing about a field in-fested by the army worm, and their presence should be welcome to the farmer.

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In general, therefore, it may be said that, as soon as the worms are discov-ered to be exceptionally numerous in a given field (and, as a matter of fact, they are at first almost invariably re-stricted to the immediate neighborhood of some definitely limited, permanent breeding place), all energies should be devoted to the protection of the sur-rounding crops by the means mentioned above, and the destruction of the worms in the fields first attacked may be safely left to the last.

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Fig. 3.—The Red-tailed Tachina-Fly, with its larva at left and its puparium at right; below is the fore part of the body of an Army Worm with Tachina eggs attached, somewhat en-larged. (From Comstock.)

Fig. 1.—The Army Worm: Full-grown larva; natural size. (From Comstock.)

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THE ARMY WORM.

Life and Habits of a Destruc-tive Pest.

L. O. HOWARD, ENTOMOLOGIST, (Circular No. 4, Department of Agriculture.)

GENERAL APPEARANCE AND METHOD OF WORK.

IN THE MONTHS of May and June, and sometimes as late as July, wheat, oats and other small grains, corn, timothy, blue grass and other grasses, but seldom or never clover, are occasionally over-run by multitudes of naked striped caterpillars about an inch and a quarter long and a quarter of an inch in diam-eter, when full-grown, rather dark in appearance and closely resembling Fig. 1. They usually travel in one direction from one field to another, destroying the crop as they go. They have a habit of climbing the seed stalks and cutting off the heads of timothy grass and of the small grains.

DISTRIBUTION.

The army worm seems to be an in-digenous North American insect, and on this continent is most abundant in the United States east of the Rocky Moun-tains. Isolated specimens have been found in England and South America, and the moth has been captured in India, Java, Australia and New Zeal-land. It is nowhere known as an especially destructive species, however, outside of the United States. The re-gion in which it especially flourishes ex-tends from eastern Iowa to Maine and from northern Texas to northern Ala-bama. East of the Blue Ridge Moun-tains its southerly range as an injurious species extends only to northern North Carolina. The moth is often captured outside these limits and frequently in considerable numbers, but the caterpil-lar does not seem elsewhere to be a factor in agriculture.

The adult insect is a brown moth with a white spot on the center of each fore-wing, as indicated in Fig. 2. The eggs are very minute and white in color, round, and are laid in strings of from two or three to 15 or 20. They are pushed by the ovipositor of the female moth down into the inner base of the terminal leaf sheaths of grasses or grains. (See also Fig. 2.) A strong effort is ap-parently made by the female moth to conceal them. They are laid most abun-dantly in the thickest tufts of grass, which customarily spring up in pastures over spots where cattle have dropped. In the vicinity of old fodder stacks the grass usually grows high, and this also is a favorite place for egg-laying. The moths do not con-fine their egg-laying operations to such localities, however, and the eggs have been found in old cornstalks, thrust under the sheath, and even under the bark of old cedar posts.

The eggs are hatched in from eight to 10 days and the young caterpillars feed for a time in the fold of the leaf, growing rapidly, and finally consuming entire leaves.

Under ordinary circumstances, and when not present in great numbers, the larvae feed mainly at night, and in damp, cloudy weather, remaining hid-den during sunny days. In this re-spect they resemble in habits the closely allied cutworms. They reach full growth in three or four weeks, burrow into the ground, and transform to the brown pupa shown in Fig. 2. In this condition they remain in the Summer time on an average about two weeks, when the moth again appears.

The number of generations each year varies with the climate and the season. There are in the more northern States, two or three generations, and perhaps six in the more southern States.

We have said above that the insect normally feeds by night and hides by day, and to this habit is due the fact that, although the army worm is pre-

ent every year all through the region especially indicated in a previous para-graph, it is only noticed when it be-comes excessively abundant, and this occurs usually only at intervals of sev-eral years.

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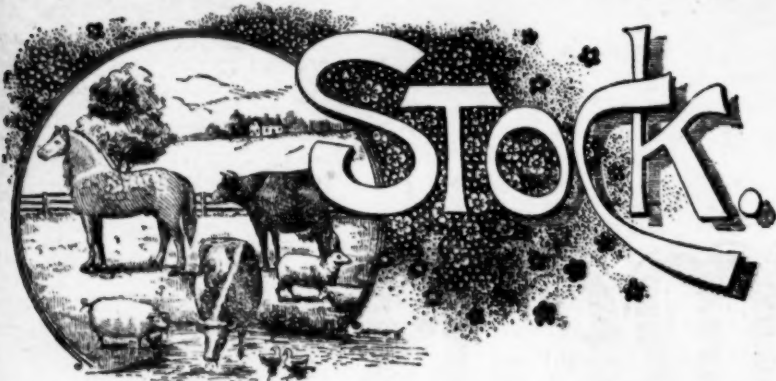
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Yard Echoes.

An Iowa stock grower says that the "keynote of profitable stock growing and farming can be summed up in one word—clover."

If you have not made provision for a crop to cut green, it is not too late yet to prepare for a drouth. Corn, oats, clover, spring rye and such crops are good.

The man that can improve his stock without introducing new blood proves himself worthy of using the best thoroughbreds that money can buy.

An animal that cannot yield a profit has no place on the farm; the more a farmer keeps of such the sooner he will mortgage the farm.

Anthrax.

Anthrax has been known and described for over 2,000 years. "Malignant carbuncle," "blain," "splenic fever," "charbon," and many other names mean anthrax. It is caused by the bacilli anthracis, minute, rod-shaped organisms, which multiply with inconceivable rapidity when they once enter the system of sheep, cattle, or other animals. It has been calculated that one bacillus will produce 5,000,000 others inside of 24 hours. Infection comes from the contamination of pastures, water supply, etc., by the excreta of diseased animals.

In different outbreaks, and even in individual cases in the same outbreak, the destructive lesions described vary somewhat in their seat and intensity. In cattle, the intestines, spleen, and liver are usually prominently affected. In some acute cases the brain and central nervous system bear the brunt of the attack, and, without premonitory symptoms, the beast, while eating or at work, reels, falls, suffers violent convulsions, or is quickly comatose, and death may occur within a few minutes. Sometimes the mouth and throat are primarily affected, constituting gill-anthrax, and this form is not infrequently in cattle and common in pigs. Notoriously the disorder most frequently occurs on rich, deep, alluvial soils, often along river banks—situations most suitable for the preservation of the bacteria. The high temperature usual from June to September proves most favorable to the sporulation of such organisms, and hence the prevalence of the disease during summer and early autumn. Animals in good thriving state appear specially susceptible to anthrax.

For prevention of the disease in cattle, affected subjects must immediately be isolated, their excretions and the premises they have occupied thoroughly disinfected, and their carcasses, unskinned and unopened, buried in graves at least four feet deep.

Castrating Calves.

The usual method is for a handy man to place the calves on their buttocks and support them in that position; draw each hind limb so that the hoof is brought up underneath the elbow of the corresponding fore limb, and secure the legs in this position by a strap or piece of rope placed round the cannon bones. The operator, whose hands, knives, and clamps should be cleaned and disinfected by washing with soap and water, and moistening with carbolic lotion, grasps the scrotum so that the testicle is pressed toward the end of the purse, and with a sharp knife makes an incision through the skin and subjacent tissues about one and a half inches to two inches in length, from above downwards and reaching nearly to the point of the scrotum. The protruding testicle is seized, the cremaster muscle divided, and the cord drawn out sufficiently to allow of a pair of wooden clamps being placed around the cord. The clamps are closed, and with a sawing movement of the knife the cord is divided. The clamps are cautiously loosened. In older animals any bleeding is stayed by touching the oozing artery with a red-hot iron. If the six months' calves have been fasted for 12 hours there will, however, be little or no bleeding, nor any untoward effects. Thousands of young calves are castrated, like lambs, without any clamps.

Guard against worms in the young pigs by giving constant access to plenty of salt and wood ashes. A little asafetida in the slop twice a week will act as a good tonic. Plenty of grass or vegetables are also good. This is the advice given by an old swine-grower.

It takes very little grain to keep hogs in thrifty condition when they are at pasture. Grain fed at this time gives much larger return than will the increased quantity given when the hogs are put up for fattening. The clover and grass they eat are less valuable for the nutriment that they contain than they are for keeping digestion in good order, so that the richer food given may do the most possible in building up frame and putting on fat.

As long as wheat is as low and pork as high as it is, it is going to pay better to feed the grain to the hogs than to ship it. It is claimed that wheat close on to \$1 a bushel can be profitably fed to porkers selling at \$4 per 100. But like all other profit-making operations, this must be done with wisdom. Wheat makes bone and muscle faster than corn, and thus should only be fed to young and growing hogs, which should be fattened and finished off on corn.

Experiments are now being made with compressed hay for paving blocks. The hay, after being pressed, is soaked in a drying oil, which, it is claimed, renders it indestructible.

Cost of Pork.

If it is assumed that one bushel of sound corn will make 10½ pounds gross of pork, then we shall have the following food cost of pork at the various prices of corn:

Corn per bushel,	Pork per pound,
10 cents,	.05 cents.
12½ "	\$.10
15 "	1.40
20 "	1.90
25 "	2.40
30 "	2.65
35 "	3.13
40 "	3.50
45 "	4.25
50 "	4.75

This, of course, is only the food cost, and makes no account of labor, capital invested, etc.

The food cost also increases very rapidly with every month that the pig lives. At the time of littering the pig should weigh about three pounds, and at the end of each month should weigh as follows:

1st month,	15 pounds.
2d "	30 "
3d "	45 "
4th "	75 "
5th "	103 "
6th "	135 "
7th "	170 "
8th "	210 "
9th "	235 "
10th "	300 "

The Sheep Raisers Should Perfect Their Organization.

At no time since 1867 have the sheep raisers been so nearly of one mind and heart as at this present time. This has come mainly because their interests have been assailed by political enemies backed up by the foreign wool growers and a mauling sentiment of theoretical, bigoted, un-American, unpatriotic sophists. There never has been any question as to the need of National protection; the American wool grower under present conditions cannot hope to compete with the cheap conditions of the world in American markets. This feeling is unanimous, and has brought the sheep raisers to be a unit in every section of the country. The relation is most desirable and should continue. It would foster the industry if extended in a liberal, generous spirit among sheep breeders and flockmasters. In this organized form, sheep raisers, shepherds, would be a power in good times, as they are now under gloomy surroundings. There is much to be done besides the political side of the question, which now feels the force of the organization in the Congress of the United States. We would suggest that National, State, County, and neighborhood sheep associations discuss theories and practices that are helpful at every meeting. Let such be a feature of every meeting.

"The All-Purpose Sheep."

This is an old ad with theorists in sheep affairs. It sounds well, and is rather catching to those who know nothing about practical sheep husbandry. There is no all-purpose horse or cow, or an all-purpose man. There are all-around good sheep, the same as all-around good men, which means they average well on common lines. The great demand is for special-purpose sheep. To illustrate: If a man wants wool, every intelligent, well-informed man would point to wool breeds. If mutton is wanted there is a special breed for each sort of conditions. This is successful sheep raising in a nutshell.

Pen Notes.

Blue grass is best for sows and pigs in Spring, followed by clover later in the season. Oats, barley, and peas furnish a profitable change of pasture.

Air-slacked lime scattered over the floor or ground of the pig pen will make pigs more healthful and destroy bad odors.

Guard against worms in the young pigs by giving constant access to plenty of salt and wood ashes. A little asafetida in the slop twice a week will act as a good tonic. Plenty of grass or vegetables are also good. This is the advice given by an old swine-grower.

It takes very little grain to keep hogs in thrifty condition when they are at pasture. Grain fed at this time gives much larger return than will the increased quantity given when the hogs are put up for fattening. The clover and grass they eat are less valuable for the nutriment that they contain than they are for keeping digestion in good order, so that the richer food given may do the most possible in building up frame and putting on fat.

As long as wheat is as low and pork as high as it is, it is going to pay better to feed the grain to the hogs than to ship it. It is claimed that wheat close on to \$1 a bushel can be profitably fed to porkers selling at \$4 per 100. But like all other profit-making operations, this must be done with wisdom. Wheat makes bone and muscle faster than corn, and thus should only be fed to young and growing hogs, which should be fattened and finished off on corn.

Experiments are now being made with compressed hay for paving blocks. The hay, after being pressed, is soaked in a drying oil, which, it is claimed, renders it indestructible.

SHEEP AND WOOL.

Shearings.

The sheep was the only animal selected by the wise Creator of all things as a type of the mediator between fallen man and an offended God.

Wool cannot be grown to the best advantage from the backs of poor sheep any more than good crops of grain can be grown on thin, rundown soil.

Lambs up to the age of 15 months or two years are much more susceptible to the attacks of internal parasites than older sheep, because of the softness and juiciness of their tissues.

The sheep is the only animal that furnishes material year after year, during its life, to clothe the human family, and finally cheerfully gives its body as a most acceptable article of food to its owner.

Unless compelled to raise money by the sale of clips, we would advise putting the wool in a clean, dry place, and quit worrying about it. This is no time to sell wool; it is a time to hold on; after the elections are over values will advance.

Be sure to sow rape on well-prepared soil at any time up to Aug. 15 for the lambs. It grows in six weeks and makes the most complete and reliable pasture for lambs, for ewes being fitted for the ram, and for sheep to go into Winter quarters successfully.

The sheep was the only animal possessing fitting characteristics to be chosen as a symbol of innocence. It is a beautiful tribute that the sheep should be placed "on the right hand," symbolizing the fortunate reception of the righteous in

heard now, and never by men who know what they are talking about. There was a time when some critics condemned the size of the Merino as too small. These calumniators have been silenced by the preference of the public, who want a carcass of 50 or 60 pounds, with the fat and lean evenly distributed throughout, which the Merino readily furnishes. The market discriminates against the big, fat kidneys and an outer layer of fat that no one eats.

An experienced handler of sheep can tell at a glance what kind of "luck" a flock owner will have at lambing time by looking over the ewes. To such a man the ewe flock reads like a book. If they are scrawny, constipated—a nervous, fussy set, the chances are there will be little if any milk for the lambs, and nothing can be done to save the puny little things, that ought never to have been born into the world. If the ewes are over fat, they will be languid, stupid—a plethoric condition wholly unfit for successful motherhood. On the other hand, if the ewes are in fair condition, bright and alert, calm and content, ready for their rations, strong and vigorous, there need be no apprehensions as the yearning approaches. The lambs will come strong, hungry, and willing; the ewes will become mothers as naturally as buds become flowers. There will be possible mishaps that require the attention and skill of an experienced shepherd, but such instances are rare if the ewe flock has been carefully handled during the latter period of pregnancy. All this will the old shepherd see, though if conditions are bad he will not say much if he is your friend; if he don't like you he may tell you the truth.

We think better of Nero. He levied a heavy tax on dogs.

Rations for Lambs.

The Minnesota Experiment Station gives the following summary of the results of a lamb-feeding experiment:

1. Corn fed with hay produced 20 cents profit per lamb more than barley fed with hay, when corn was valued at \$13.04, barley \$14.52, and hay \$7 per ton, average prices throughout the State at that time.

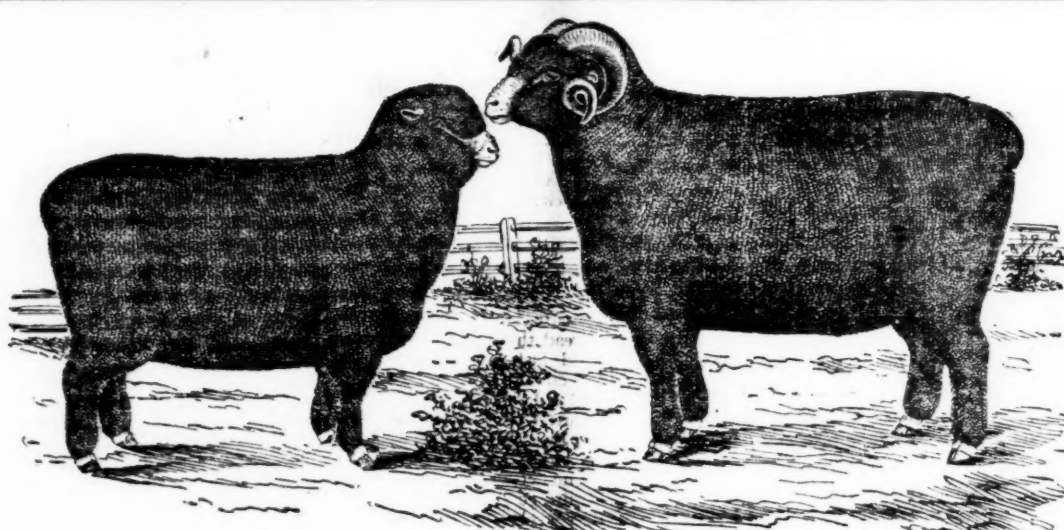
2. When one-tenth oil meal, costing \$27.87 per ton, was added to the grain, the lambs fed corn with hay produced 27 cents profit more each than those fed barley, oil meal, and hay.

3. Rationing the profits proportionately on grain and hay according to the cost of the amounts of each fed, the corn fed with hay produced 80 cents per ton more than the barley when fed to lambs.

4. When both were thus fed and with an addition of one-tenth oil meal, about \$2 more per ton was received for the corn than for the barley.

5. With the corn worth \$13 per ton, or 36½ cents per bushel, the barley was worth, as shown by the lambs, \$12.30 per ton, or 29½ cents per bushel; the "screenings" (90 per cent. small wheat grains and edible weed seeds), about \$10.35 per ton; the small wheat (90 per cent. small, shrunken wheat), \$10 per ton; the wild buckwheat (90 per cent. wild buckwheat), \$9.56 per ton, and the pigeon grass seed (90 per cent. pigeon grass seed), \$9.40 per ton.

6. The feeding value per ton for sheep may be calculated with fair accuracy by first determining the total percentage of grains of wheat, oats, barley, and edible weed seeds and floury particles of such



Improved Saxony Ram Priz. Winner, No. 1, and Improved Saxony Ewe No. 17, Bred and Owned by John G. Clark, Lagouda, Washington Co., Pa.

the final reckoning of the human family by the righteous Judge.

Spring time brings so much work that some of the plans and intentions so carefully studied, the results of experience, are likely to be overlooked or, worse yet, crowded out by the routine work of the farm. It is the custom of most farmers to "get around to" a thousand and one things "as soon as they can," whether they ever get it done or not. A word must be spoken again for water and shade in the pasture; make big and safe provisions for water, and put the shade for stock up on the higher ground. Let the sheep sheds be so low that colts and cattle cannot go under them and disturb the sheep.

No one can question the statement so often referred to in this paper, that sheep husbandry belongs to agriculture, and must exist in this country so long as agriculture is the prominent industry of the American people. To exist, there must be profit in the business, since there cannot be interest in a business that does not justify the investment of capital and the devotion of time and energy, unless it affords a reasonable remuneration for the same. On this basis the inquiry is, How can a farmer find a way to reasonable profits? The reply would be, By going straight along, watching the corners, keeping close to the front lines in breeds and flock products, and relying upon the natural facilities the market demands, and the skill that experience has brought and made available.

A friend complains that we are saying too much about politics, and wants to know if plain, old-fashioned, practical questions are not of greater importance to the wool grower and stock raiser? In reply we say yes and no. If the threatened legislation was not of such vital significance, so far reaching, so overwhelming and ruinous to the present and future welfare of the live-stock industries of the country, we would gladly confine all discussions to the principles and practices of breeding and managing live-stock. Is it not a fact, though, that stockmen are driven into a corner by politicians, and that they must either contend for their rights or be ruined? We can't see it in any other light, and until these questions are settled, we propose to sound the danger signal as long as there is a hand raised to wrong and ruin the sheep and stock industries of this country, and then quit.

The breeders of Merino sheep are very generally giving prominence to the mutton qualities in selecting and breeding to such characteristics, early maturity and better feeding qualities as are generally approved of the best mutton breeders. It is found that this breed readily responds to all that is required of them. They were always easy keepers, fattened readily when well fed, and as young sheep gave a quality of mutton equal to the world-renowned Southdowns. Many unkind criticisms were indulged in as to the quality of Merino meat, but human like, these censures were bestowed upon the poorest specimens—old sheep that had passed their usefulness as wool bearers, and in no sense fitted for the shambles. These criticisms are rarely

heard now, and never by men who know what they are talking about. There was a time when some critics condemned the size of the Merino as too small. These calumniators have been silenced by the preference of the public, who want a carcass of 50 or 60 pounds, with the fat and lean evenly distributed throughout, which the Merino readily furnishes. The market discriminates against the big, fat kidneys and an outer layer of fat that no one eats.

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6. The feeding value per ton for sheep may be calculated with fair accuracy by first determining the total percentage of grains of wheat, oats, barley, and edible weed seeds and floury particles of such

grains and seeds, and giving this three-fourths the value of corn or barley at ruling prices. If there are present enough mustard, pig weed, or other bitter weed seeds to make the flavor decidedly bad, a less valuation must be made on account of less feeding value. Seeds of noxious weeds also count against the value of the sample, as the manure will scatter them on the farm unless especial care be used. The straw, chaff, pieces of weeds and other similar materials, forming a larger or smaller part of the screenings, have little value on the farm where roughage is very cheap, and hardly need be taken into account.

7. It paid well to feed one-tenth oil meal in the grain rations, both when feeding corn and when feeding barley.

8. The pens of lambs which made the most clear profits in increased value above cost of grain and hay at prices named in table, were those fed cracked corn with one-tenth oil meal and those given a fairly good sample of wheat screenings. The pen-fed barley gave the least profits per head.

Manure and Fertilizers.

With ordinary farm or stable manure, it will generally pay to use some potash for corn; 125 to 150 pounds of muriate of potash has given profitable results.—Prof. Brooks, Massachusetts Agricultural College.

Very true, farmyard manure is rather one sided, having an excess of nitrogen, and a vast amount of organic matter, which will keep up nitrification in the soil, but is deficient in potash. But we have long been of the opinion that the cumulative process of indirect fertilization for all of the ordinary grain sale crops of the farm is decidedly better than to apply these manures and fertilizers directly to the sale crop. And then the effort to help out the deficiency in the stable manure by adding potash to it, while good in itself, is rather an uncertain and indefinite practice, and makes the proper distribution of the potash difficult.

The corn crop is always better if planted upon a buried sod, and the sod is always better if manured the year before it is buried. The place for all the manurial accumulation of the farm is on a sod that is to be plowed for corn the following year. The sod is helped, and gives better results during that year and the manure is gotten into better condition to feed the ensuing corn crop than if applied first to it. The sod needs the potash, too, and should get it all over. So after putting all the manure you can make on the sod, give it in addition all the potash and phosphoric acid you can afford. They will not get away from you. The wonderful absorptive power of the soil will hold them for the future crop, and the well-fed sod will give you a bigger crop of corn for it. With that increased mass of organic matter, the process of nitrification will go on rapidly through all the hot weather, during which corn makes its growth, and whatever nitrogen may have escaped in top dressing the sod will be made up many times over. I would advise the use of not less than 200 pounds of muriate of potash per acre on the sod, and that the home-made manure be made to stretch as far as possible. The manure can be hauled out on the sod all Summer as fast

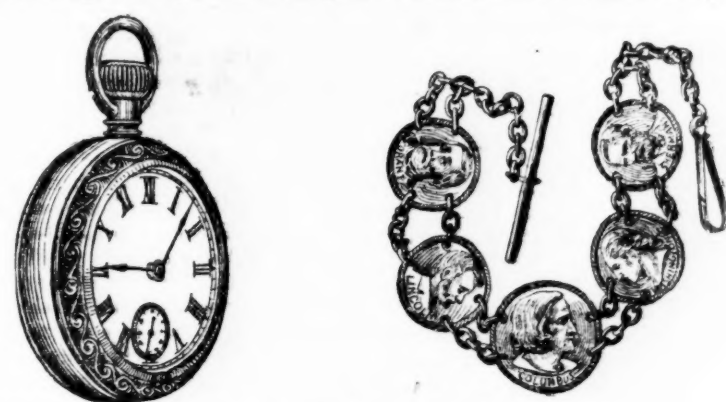
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as made, and thus save the enormous waste of leaving it in the yard, and the hurry skurry to get it on land to be planted in the Spring.

Use your manure and your fertilizers to feed a sod and trust the sod to feed your crops, and you will never be disappointed.—W. F. Massey.

Egyptian Cotton.

The rapidly-increasing importation of Egyptian cotton into this country is attracting much attention. It is claimed to be the result of planting American Sea Island cotton seed on the banks of the Nile. Its color is light brown, and the fiber is fine, soft, and lustrous. It is very long; the fiber of Sea Island cotton sometimes reaches two inches, while that of ordinary American cotton is about one inch. Egyptian cotton averages about an inch and a quarter. It has altogether superseded lisle thread, and made extensive inroads upon the use of Sea Island cotton, as it is much cheaper. It is used for Balbriggan underwear and hosiery, for thread and other special objects. The Lambeth Rope Company, of New Bedford, Mass., uses about 1,000,000 pounds a year, and says that it gets better results from it than from any other species of cotton. It is claimed that it cannot be raised at all in this country, but THE AMERICAN FARMER does not believe this for a minute. Now that public attention is being attracted to it, we are certain that in a few years we shall find some part of our 3,500,000 square miles of National domain quite as capable of raising that kind of cotton as Egypt.

The dispute as to the fertilizing value of coal ashes goes on. At first it was felt very decidedly that they could have no manurial value, though they might do some good in a mechanical way by separating the too-tenuous particles of the soil. Now it is thought that they may be richer than supposed in phosphoric acid, and that their aluminas may have some value not quite understood.

The New York Experiment Station estimates that the farmers of that State lose the enormous sum of \$50,000,000 a year, or nearly \$1,000,000 a week, in the liquid manure that they allow to run to waste.

Manures: HOW TO MAKE AND USE THEM. By Prof. Frank W. Semple. This is a book in which farmers have waited for years. It tells all about manures in a plain, easily understood way, and gives full directions as to their management and that of the land. Sent postpaid (with address on receipt of 50 cents, or with THE AMERICAN FARMER for one year for 50 cents).

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POULTRY PIGEONS & PEST-STOCK



SUCCESS WITH CHICKS.

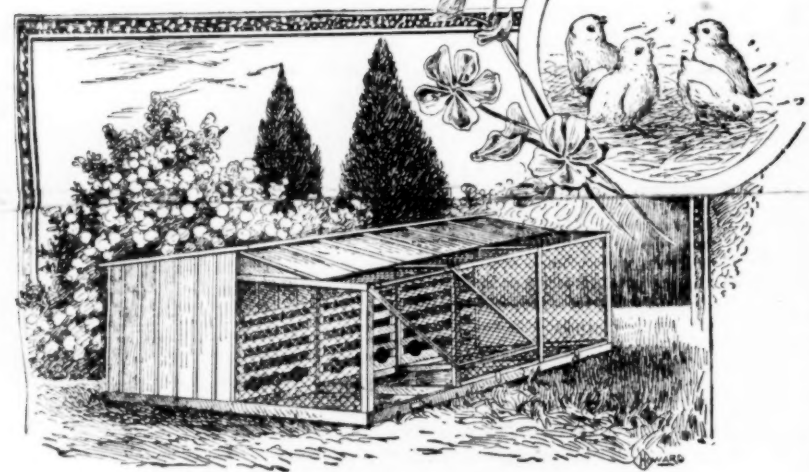
An Ideal Coop With Many Advantages.

BY GEORGE E. HOWARD.

ONE FEATURE OF poultry raising has so many difficulties attached to it as the care and raising of chicks. It is not so difficult to hatch a fine brood, but to properly raise it requires considerable time and attention.

To have success with poultry it is necessary to consider the details of the work. In the chicks one must look for the laying stock the next Fall and Winter, and bear in mind that every chick counts when adding up the total for the season.

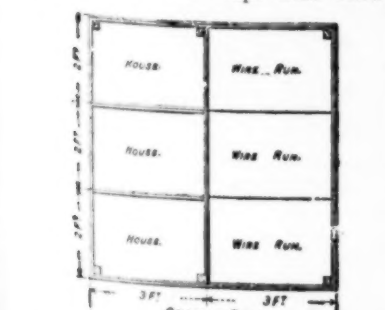
The best results in raising chicks have been obtained by completely controlling them at all times; that is, by putting each brood in a separate coop and run, where every attention may be given to their welfare and comfort. By such an arrangement not only is labor saved, but the brood is free from the annoyances and inconveniences of other poultry. Experience has taught me that this is the right way to care for them, and the results resulting therefrom have, indeed, been small when compared with



PERSPECTIVE VIEW OF COOP.

previous efforts in this line. In building the coop consider first the dryness of the same; take every precaution to make it waterproof, for nothing is more detrimental to the little chicks than dampness. Numerous losses are occasioned by their becoming chilled with the wet, which results in diarrhoea and death. It matters not how the coops are built, whether of a dry goods box or specially constructed; see that it has a floor to shut out the dampness from the ground, and a roof that sheds rain.

The coops shown in the illustrations will avert many inconveniences. In this plan the coops are built three in number, on the same principle that poultry houses are arranged to contain a variety of fowls with separate runs attached. Each division is separate and can be used for one, two or three broods at a time, if desired. The general custom is to have individual coops placed promiscuously around the yard; by this arrangement they are in one spot and easy of attention, saving much labor when a number of broods are hatched at one time. When the hens and broods are allowed to roam at will for the first three weeks, there is no telling how many may be lost before they attain the age to resist the variations of the weather and to care for themselves. By confining them for two or three weeks they are enabled to receive every attention needed for their rapid growth and development; in the coops here shown

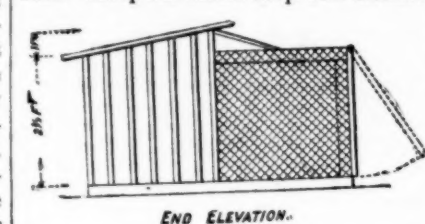


they are free from the molestation of the older birds, or the angry peck of an ill-natured hen as they scramble for food and drink. The mother hen has nothing to detract her attention from the young, and performs her maternal duties in a better way, to the advantage of the youngsters.

The ground plan of the coop is six feet square, with three divisions two by six feet each. One-half of the frame is covered with matched boards, to serve as

a floor for the inclosed part. The highest part is three and one-half feet, sloping toward the rear; the open portions are covered with one-inch wire mesh. The partitions of the inclosure are solid boards two feet high, with laths at the top to afford ventilation; the partitions of wire runs are made of laths, placed one-half inch apart, to avoid fighting between the hens, but permit a free passage of air from one space to the other.

The roof should be made as close as possible, and covered with tarred paper to insure dryness within; the sides should be built of even boards and stripped over the cracks with one-half by three-inch strips. Place dry earth on the floors of the inclosed parts one inch thick, and a little straw in the rear for the hens and chicks to lie on. In the wire parts cover the ground to a thickness of two inches with white sand; this prevents dampness after a rain. Keep the entire coop well cleaned

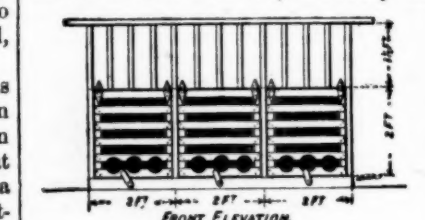


END ELEVATION.

and whitewashed; sprinkle insect-powder in the corners to keep out vermin. Place water in fountains in the runs; scatter the grain food on the ground and feed the soft food in pans to avoid the waste pattering on the ground. Never feed or place the water fountains in the closed part, as this is intended for roosting only. When taking the hen and brood from the nest, they should be kept in the roosting part for a couple of days; the lattice door separating the coop and the run should be closed during this time to keep the hen confined, but the brood may have free access through the lattice door to the run. After this, the lattice door may

be kept raised, and the hen and brood can use the entire space of house and run. When the chicks have grown sufficiently strong, the outer door may be raised, and the brood can range on the grass during good weather, and be cooped here at night until the hen leaves them, when they should be veed to range to themselves and be cooped in a different house until they are ready for

the pens in the Fall. [A perspective view of such a set of coops is shown in Fig. 1; in Fig. 2 is seen the front elevation without the wire frame. The side elevation is shown in Fig. 3, and the ground plan in Fig. 4.]—American Agriculturist.



INCIDENTS
In the Life of an Incubator Chicken.

BY MYRTIS PAGE.

On Aug. 17 I pipped the dark colored shell of my egg. But I did not walk out or know much about things until the next day. Then I found that I was standing on a wire netting. There were eggs and chickens all around me. It was almost as dark as it had been inside the shell; the only light came from some three-cornered holes in each corner of our home. I learned afterward that they called this home an incubator. Isn't that a long word? We chickens don't often use it.

Oh, it was so nice and warm in that box! A great deal of heat came from over us, and there was always a cloud of steam from below—from the moisture pans, I heard them say.

At first I was damp and somewhat chilly, but the heat soon dried me off nicely, and I seemed to shake out into a soft, round ball.

When there was just a little jar the chickens would all say, chir-chir-peep-peep, so quietly that it made us all go off to sleep again. Soon I learned to say chir-chir-peep-peep with the others.

Every once in a while there would be a shrill peep! peep! and then we knew some chicken was in trouble. Perhaps the shell wouldn't break and let him out, or he had broken the lower side against the wire and couldn't turn over. Just then he needed a real mother hen, but we just sang to him and all would be quiet. I cannot tell you now those piercing "peeps" did make my head ache.

We were all as happy as could be for a long, long time. Suddenly there was a great jarring, and a voice said: "Now we must work

quickly." We said: "Peep-chir-chir-peep-chir-chir."

Before we knew it a great wave of bright light darted over us. It came from two glass doors in the side of our box. I could not see, but shut my eyes tight. When I opened them I was being taken out by a young woman. A bright girl they called Cornelia was holding a willow basket. She said as she saw me: "Oh, Myra, just look at the chicken in your hand! It is a blue one! What kind can it be?" "Not a Wyandotte, surely," Myra replied, as she put me down carefully with the others in the basket. "I don't see any more like it," she continued as she kept taking them out.

"No, this is the only one. I must have it for mine," she declared.

At this time they only took out those that were strong and fuzzy, and left the young and weak ones. About 50 of us were now in the basket. Myra took the basket and placed it a few feet away, covering it with a nice warm cloth. But I did not want to be covered up, so I wriggled around and poked my head out to see what they were all doing. What do you think they did? Cornelia pulled out the wire netting I told you about, or one of them—there were four. Myra quickly turned all the eggs in this, leaving the pipped side up.

In the second tray they found a number of chickens that wanted to get out of their shells very badly, but part of the shell had dried down onto the bottom. I watched them and really feared they would hurt them. Myra was so gentle that I didn't worry long. She pulled out one of the pieces, saying: "Aren't they old-looking creatures? They haven't had quite moisture enough."

As Cornelia drew out the last tray she said: "These eggs were put in last night, and the chickens do not even peep yet. We can turn them with the extra tray. They put the extra tray over the tray of eggs, and holding it tightly turned it over and put it back. Myra glanced at the piece of wood they called a thermometer, saying: "Only 90, so many degrees below 103. Never mind; we worked as fast as we could."

They closed the glass doors, then the large, wooden one, and fastened it. Next the lamp at the end was trimmed and filled, the three-cornered holes were covered with wire mesh, and then Myra lifted us up. I peeped loudly as I could. The chickens were crowded and jostling one another, for we were all cold and I colder than the others, for I had had my head out so long.

We were carried through a door, up a flight of stairs, through two doors and a room into a kitchen. Here, a pretty young lady came to look at us. "Oh, aren't they lovely? Did anyone ever see such cute things? Oh, my, what regular peeps!" she kept crying. "They make one think of a plump, cozy quack," she added, after she had kept quiet a moment, "with oh, such beautiful shades, only there are no bright colors."

Cornelia fixed a large, long box. On the bottom was a deep covering of sawdust. Only about half of the box was covered, and this cover was lined with old flannel cloth, but very soft, and long ends of the flannel were fastened over the edge and hung down to the floor. They called it a brooder, but it wasn't heated with a lamp as the best ones are.

Myra put us in this place. We shook out our wings, tried to fly a little, and then ran out and in and around the flannel ends, having a fine time. Sometimes when we were not careful, we ran over a chicken not so strong as the rest of us, and he would fall and peep so mournfully.

I wish you could have seen us all! We certainly looked like something very mixed up. You see, we were hatched as an experiment to try to hatch different kinds of eggs at the same time. My companions were Wyandottes, Plymouth Rocks, Black Spanish, Leghorns—both white and brown, Hamburgs—two varieties; and then there were such queer chickens. I suppose I was queer, too, for I was the only blue one. Then there were white ones striped with black, and those with gray wings. Nearly all had different-shaped and different-colored bills and feet.

Cornelia brought a dish of white crumbs and sprinkled them on a clean board in front of us. We didn't know what to do with them. Myra and Cornelia kept talking to us, calling us "Nice little downy things," "little fuzzy balls," and "outy-touty chickens." Finally Myra called: "Come now, chickens, come and eat these bread crumbs." I had been over and around these crumbs, wondering about them. Now, I thought, I would take a piece in my bill. I swallowed it. "Oh, isn't it good? Chir-chir-peep-peep." "I want another piece—tee-tee-chir," and soon we had told one another and were eating away.

Next a bright tin dish of water was brought. We stepped in it and it was cold and wet to our feet; we flapped our wings in it, but it made them wet, too. Then we dipped our bills in it, threw our heads up high and let it run down our hot throats.

Oh, we were so tired. We tried to sing, but this box was not so warm as the first one and we could not sing or go to sleep, so we just "peeped" and "peeped." Myra came and covered us with a warm cloth and in a few minutes we were all tucked up close together, sound asleep for the night.

The next morning Cornelia and Myra brought 30 chickens from the incubator and put with us. How feeble they did look! You see we were quite grown. They couldn't stretch their legs like the wings, and were being wanted to brooder. There were no blue chickens in the lot, or at least I thought not until Cornelia came up to our box with a pretty blue one in her hand. She said, "Myra, just look! This poor chicken is deformed. He can't walk. Just see, he's put his head down." I looked at him and he was plump and round, but he would try to move by making his wings go, and would tumble over and then peep.

"I am afraid we are not careful enough. This is not very well done to-day—this poor chicken and four drowned in those moisture pans," said Myra thoughtfully.

"It is too bad, but I will roll the dead ones up in leaves and bury them in the hedge. Four funerals! And the little blue—he is just like the one in the brooder, only he can't walk," and Cornelia put the blue cripple gently into a lined box as she talked. "I do hope that blue one in the brooder does grow! I hope that he won't die," she added as she left us.

We were kept covered nearly all the rest of the day, being let out about every two hours, however, to eat and drink. The new chickens watched us, and tried to do as we did, and before long they knew as much as we did. The next forenoon they put our brooder out of doors and built us a nice pen with boards. What a great place it did seem! At first we were afraid. They brought more chickens to live with us. Fifty new comers! They were the funniest lot yet. Some had pieces of shell dried on them; others had knotted places in the down mostly on their heads, and one fine gray one could not use his left foot.

I stood around and watched. Cornelia talked so much about my being such a very nice chicken, that I did not feel like running down the rest. And then, I wanted to keep out of trouble if I could. Some of the others would try to jump over the pen, and get a fall, all would be quiet. I cannot tell you now those piercing "peeps" did make my head ache.

We were all as happy as could be for a long, long time. Suddenly there was a great jarring, and a voice said: "Now we must work

wheat, and lettuce fined up to eat, and sour milk and clear water to drink. Once I caught a grasshopper and before I could kill it a white chicken saw it, and then another and another, until 15 were chasing me around the pen, into the brooder, and out, through our milk, and into a corner. I stopped a moment and a black one grabbed it right out of my mouth. I jumped and got it and swallowed it whole. It just about filled my crop. I was frightened and ran under the brooder and stayed there a long time.

After a few days Myra let us out of the pen. Myra wasn't it pleasant! We ran through the grass, biting off pieces, and then we found all the grasshoppers, bugs, and flies we kept my feathers very smooth. My wings had grown almost an inch, my tail appeared, and I had a splendid rose comb, Cornelia said.

But there were some things to trouble us. A few days later Cornelia said, "Myra, I had three funerals this noon. Isn't it too bad. What can be the matter?"

"Yes, it is. I don't know. We are so careful. They have been fed well. I fear it was too cold for them at first," Myra would reply.

The little blue cripple died, and the one with the lame foot. Those that died would stop even while they were eating, open their mouths for breath, and die.

One night five of the chickens were sick. Myra and Cornelia came out and put us into our brooder. I got my head out to see what was to be done with the sick ones. Myra took a shallow tin, and Cornelia poured something out of a bottle into it that looked like water. They called it turpentine. They rubbed some of it on three of the chickens' necks, made them gasp and look as though they were dying. They didn't use any more turpentine, but put two chickens with us and took the three away. Only one ever came back.

A few days ago we had a terrible time. Suddenly it grew dark, almost as dark as night. Then it thundered. Myra came and called to us, but we wouldn't go in. It grew darker and darker, and Myra, Cornelia, and their brother tried to drive us into our brooder. Most of them were glad to get in, but seven chickens and I ran under the hedge. We wouldn't come out. So they left us. The wind blew harder and harder, and it began to rain in great sheets of water. We didn't know anything about rain. We started for the woodshed, but ran as fast as we could, the wind took us the way and then then. One got under the doorstep, three in the woodpile, and three of us in the shed, but not soon enough, for we were just drenched. Oh, you ever see a wet chicken? If I hadn't been so wet and cold myself, I should have laughed. We were all shivering, and after we had become warm and dry, we were put into the brooder. How thankful I was! I squeezed up among the chickens and told them all about it.

One morning, when we were two weeks old, we came out jumping and clapping our wings, when all at once there was a terrible "peep," "peep." We all stopped. What was it? One of our largest chickens had wobbled his head in a loose thread that hung to the cloth. There he was held fast and could only go around in a half circle on one foot. How frightened he was! Myra took him up and Cornelia cut the thread with a drawknife that lay on the shelf. But Myra couldn't cut it from his foot until she got a pair of scissors. Oh, how swollen and red his foot was! They rubbed it and let him go to breakfast.

Now we are four weeks old. There are 93 of us left. We are in a new home, large and roomy, in the garden. It is fine. We have boiled potatoes and sweet corn on the ear to eat. We can almost digest whole wheat.

Cornelia said to Myra: "Don't they look well? How they do grow! I think they will all live now, don't you? And my pretty blue one is almost big enough to crow."

"Yes," replied Myra, in a few weeks they ought to make good broilers.

Good Rules to Follow.
My mother has raised chickens for 37 years, and has had very little trouble with vermin.

A close application of the following will be found beneficial:

1. Have sawgrass poles for roosts, as vermin do not like the smell of the wood.

2. Before the hen begins to set, sprinkle the nest with wood ashes.

3. When the brood is hatched remove the box to the outside of the henhouse, and expose to the sun. After the contents have been burned, refill and replace.

4. Have two or three bottles of kerosene hung up convenient to reach to refill.

5. Sprinkle wood ashes on the floor and roosts.

6. The nest material should be renewed every two months.—HOWARD CARTER, Maryland.

Brown China Geese.
For constitution and vigor the China goose is placed at the head of the races of geese which have been bred in European and American yards. They do not appear to be as large as the Toulouse, but this is accounted for by their plumage being very close. On the water they move more gracefully than any other variety. By some they have been called swanlike, and they really approach the swan in appearance nearer than any other goose.

In the aged Brown China a dewlap develops under the throat, and these have been shown as African geese, and have had a special class as such at shows. However, I have never met any breeder of them who could point to any distinction between them to convince one that they were different races. Old breeders who have had both have stated that there were no differing race characteristics, and that they believed them of the same stock. From the close feathering and their activity, we should expect the flesh of the China to be the most gamey and firm.

The plumage is grayish-brown, lighter underneath, and with a dark-brown stripe running from the knob of the beak down the back of the neck. Their carriage is very upright. Their note is more harsh than other domesticated geese, being more like the wild Canada geese. They require about the same care as other geese, but, especially, access to a clear, running stream after the young have developed feathers, to produce the best and most showy specimens. They are prolific layers, though the eggs are rather undersized. They breed twice and, not rarely, even three times in one season.—American Agriculturist.

FREE TO INVALID LADIES.
A lady who suffered for years with uterine troubles, leucorrhoea, nervousness and other irritations, finally found a safe and simple home treatment that completely cured her within a few weeks. She will send free with full instructions how to use it to any suffering woman who will send her name and address to Mrs. D. C. ORRIS, 1000 Bond Street, New York City.

When writing mention this paper.

THE GARDEN.

Pluckings.
Use tobacco dust and bonemeal liberally about the squash vines.

Wax or bush sorts of beans must be planted repeatedly to have a succession.

Not more than four good melon plants should be left to each hill. Keep the ground well cultivated about them.

Ohio farmers have been investing heavily in a special variety of onions, and find themselves raising a superior crop of jimson weeds.

For potato bugs, spray with a mixture of from four to six ounces of Paris green to 50 gallons of water to which has been added a pint of glucose or sirup.

Tobacco dust, freely applied, will drive away the flea beetle, slug, green worm or the maggot and cut worms from cabbage plants you have set for Winter use.

Celery plants will need hoeing and perhaps an occasional thorough watering. Prepare the ground for the Fall and Winter crops. Set plants five inches apart in the rows.

The disease known as club root in cabbage is always the result of growing them on the same ground in succession. It is also the most prevalent on land which is deficient in lime.

The earliest strawberry runners taken up carefully and set in a new bed will give a fair crop of fruit the next season, especially if attended to and encouraged to grow after they have been set out.

The first time a man ever plants a flower garden you can't persuade him for a while that the florist hasn't swindled him by selling him the germ materials for a lot of weeds.—Somerville Journal.

Turnips may be sown any time before the 10th of August. They should be sown on very well-prepared ground, and if sown just after a rain they will come up and make a rapid growth. Root will sometimes drive the flea beetle from them.

Those who prefer branched raspberries should top the young canes when about three feet high. If permitted to get almost full grown before being done, they branch only from the top, becoming top-heavy when in fruit, and thus defeating one of the objects of the process, which is to make them of a self-supporting nature.

In regard to onion sets, W. Iowa farmer says: "I planted sets in July and they never died down, so I put them on the ground after pulling them and made a hog trough out of two one-foot boards and laid it over the onions, and then, as the weather got cold, I covered the same as celery. They came out nice and green in Spring. Set them 1st of April, and they all ran to seed. The sets were about as large as a good-sized pipistem."

Tomatoes do not require very rich soil, as vine growth will result at the expense of fruit setting. The best way of training is to take up a single stem and rub off all side shoots when quite small, and by the 1st of August stop the leader, and be content with the fruits which have then set. To obtain very fine fruits the plants must be well supported and the support must be chiefly given after the fruits have set and commenced to swell.

The Kansas experiment station is fighting destructive insects with other bugs. Having discovered an efficient parasite for the chinch bug they have been cultivating them, "inoculating" the chinch and then setting the latter at liberty to infect their kind. Two hundred and fifty packages of diseased bugs are sent out daily to places where the pests are working destruction, and it is believed that only a few years of treatment of this kind will be sufficient to annihilate the chinch.

To bury cabbage, take a barrel and put into a hole dug deep enough so that only a few inches of the barrel will project above ground. Bank the soil so that it will slope in all directions from the edge and reach to the top of the barrel. Cut the stalks of cabbage close to the head and place in the barrel with the stalks up. A lid made of inch lumber, that will shed water, should cover them. Cabbage thus buried in the Fall is said to keep till late in the Spring.

Farmers of the Mississippi have been contending with that pernicious European weed, the prickly lettuce. The University of Illinois has issued a circular calling attention to its growth, which has lately spread with great rapidity. It resembles the common cultivated lettuce, and the stem is slightly prickly below. It produces small yellow flowers in heads, six or eight flowers to a head. The seeds are flat with a long beak, at the end of which is the papus. If people neglect pulling these weeds up when young they scatter far and wide.

Never disturb the ground while wet by plowing, spading, or tramping on it. See that your garden is well enriched by spreading over it before plowing or spading a dressing about two inches deep of well-rotted stable manure at least a year old. If fresh manure must be used pulverize it thoroughly and then take great care to spread it evenly. If commercial fertilizer must be used spread it evenly, six to 12 pounds to the square rod, before preparing the ground for sowing the seed. Pulverize the bare surface repeatedly the season through with a steel rake or other tool. This treatment will both clear the ground of weeds and improve the growth of the plants.

Arrangements should soon be made for sowing Fall turnips. They do best in fairly rich and rather moist soil.

The middle or last of July is the best time to sow the seed, but later will answer. Good crops have been grown when the seed was put in as late as the middle of August, but late sowing is not advisable. It is better to sow after a rain than just before it. If sown just before a rain they do not need to be covered, but if sown just after it is a good plan to drag a bush over the patch. The seed needs only a light covering to germinate. Have the ground ready, so that when a favorable time comes the work can be done without delay. Like all other root crops, turnips are much better if they can be made to grow rapidly. They should be crisp and tender. If the growth is slow they get strong and pithy.

Thayer's Berry Bulletin for August.

New strawberry beds, for family use, may be prepared this month and set as early in September as possible. Thorough preparation of ground, and great care in setting plants is even more necessary in Fall than Spring. Fall setting should give you a fair yield of nice berries the following season.

A hundred varieties are asking your favor, claiming special merit above all others, while thousands, yet unnamed, are courting an introduction. A score, or less, includes the best of all. Selection should depend on location, soil, and the special object for which berries are wanted.

The following brief report for 1894, of varieties well tested in Wisconsin, on clay, loam, and sandy soils may aid you in this selection:

Warfield. (Pistillate.) Early, medium size, dark, glossy, firm, good quality, very prolific; without doubt the best general-purpose berry grown.

Crescent. (P.) Early, medium size, bright, good quality; for family use and near market.

Haverland. (P.) Early, large, light, soft, good quality, very prolific; family and near market.

Bubach. (P.) Early, very large, bright, soft, good quality; near market.

The above are pistillates (female), and must have staminate, or pollenizing, plants with them.

Van Deman. (Staminate.) Early, glossy, medium size, firm, good quality, resembling Warfield and a fit companion for it.

Beder Wood. (S.) Early, large, light, good quality, productive.

Michels. (S.) Very early, fair size, light, good flavor, not very prolific, but best fertilizer.

Rio. (S.) Early, dark, large, good quality, fine, productive, large calyx—very attractive.

Jessie. (S.) Early, very large, fine quality, light, requires rich soil.

For late varieties, Parker Earl (S.); Gandy (S.), and Eureka (P.), are among the best.

If more varieties are wanted, select from Enhance (S.); Barton's Eclipse (P.); Sparta (S.); Greenville (P.); Great Pacific (P.); Dayton (S.), and others.

Use promising staminate freely, and select plants from new beds on which no fruit has been produced.

The study of growth and development of different varieties is intensely interesting, and there is nothing more pleasing for young people. Let them have an interest in the new plantation, assist them to a knowledge of the different kinds, and the process of originating new varieties. The best berry is yet to be, and some bright, active boy or girl may produce it.—M. A. THAYER, Sparta, Wis.

A Square Bushel Box.

A bushel box is coming into use with market men, and by reason of being square is very economical in the way of packing. It is made in three styles, one all slatted, another with a slatted bottom and sides, with solid ends, and the third with solid ends and close bottom and sides, bound with galvanized iron; in fact, it is a galvanized bound box. These boxes are very convenient for handling potatoes; the vegetables being picked up into the boxes in the field and left in them until sold. Of course, other crops can be handled in this way, as cucumbers, tomatoes, and apples. The measure of these boxes is 14 1/2 by 16 1/2 by 12 1/2, that being a bushel without piling.—HARDWARE.

NEW PUBLICATIONS.

THE QUEEN OF ECUADOR, by R. M. Manley, author of Some Children of Adam. New York: The H. W. Hagemann Publishing Company.

Among the 50-cent paper issues of the day, this story is notable. Told with skill, vigor, and in a smooth, easily flowing style, it is very charming to read. The plot is highly original and sensational, but the author tells a startling story in so quiet a manner that he escapes the reproach of too great strain after effect. The tale can hardly be outlined in a brief notice, but contains pleasant love-making, some gentle satire and many dramatic situations. There is more of the suburban life of New York in it than there is of Ecuador, and the Queen of that mythical realm declines her crown early in its pages.

Notes.

Trilby ends in the August Harper's, and the same number contains the second installment of Charles Dingle Warner's story entitled The Golden H-use. A more complete change of scene from the Old World to the New could scarcely have been effected, for Mr. Warner's story is intensely American and modern, and its developments from month to month will be awaited with eagerness. The life of New York City is faithfully mirrored in Mr. Smedley's drawings that illustrate the text.

Ministers of Grace, a novel by Eva Wilder McGlasson, author of An Earthly Paragon, Diana's Livery, etc., will be published in early numbers of Harper's Weekly. It will be illustrated by Carleton, and the entire novel will be contained in two issues of the Weekly.

Country and garden party toilettes, designed by the leading modiste of Paris, will appear in Harper's Bazar from week to week during July and August. Beyond the Dreams of a Charmer, Walter Besant's new novel, will be the leading serial story—a story which promises to be of surpassing interest, and which in its title suggests a subject that has seldom in the history of this country been more alluring than at the present period.

Would Still Be Guarded.
(Detroit Tribune.)
The devoted wife seemed not at all discontented, although his anguish was plainly poignant.
"Certainly," she answered. "I had just as lief sell my diamonds and wear paste ones as not. Of course."
For the first time a shade of anxiety swept across her face.
"I will still have a detective to follow me about when I wear them."
Yes, indeed, that would be arranged.

The Land of Ice.
(Brandon, Buckeye.)
It must be nice
To dwell 'midst ice,
And pose as a Polar hero,
Where embayed floes
And solid snows
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Unless specially directed for the Southern Edition, all subscriptions will be entered for the General Edition.

The opinion grows stronger that the passage of a Tariff Bill is being deliberately postponed until after the election in Alabama, which takes place next Monday, Aug. 6. The results of that incident will be carefully scanned and determine the shape that the bill will take.

The farmer has seen his wheat fall in price in a few years from \$1 to 40 cents a bushel, and yet he has not started out with a gun and a can of kerosene to paralyze all business, stop the running of trains, burn cars and murder the officers of the law.

At a recent meeting of Scotch farmers they generally admitted that they would have been in sore straits this year but for the great sale of their potatoes in the United States. Will any Free Trader give a good reason for helping out the Scotch farmers at the expense of our own?

If there only can be such good fortune as failure to pass the Tariff Bill, it will put many million dollars into the pockets of the wool growers.

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Washington's Magazine. 2.50 2.40

The National Tribune. 1.00 1.25

American Gardening. 1.00 1.25

The Young Spectator. 50 75

Our Illustrated Press. 50 75

OUR NEW CLUB OFFERS.

We have arranged to club with the Weekly Witness of New York. Its price is \$1 a year when taken alone. The Witness is a 16 page weekly paper and among its contributors Rev. Josiah Strong, D. D.; Rev. John Hall, D. D.; L. L. D.; Rev. Robert S. MacArthur, D. D.; Rev. Theo. L. Cuyler, D. D.; Rev. M. C. Lockwood, D. D., of Cincinnati; current weekly sermon by Dr. Talmage; Sunday school lesson by Dr. George F. Pentecost, etc. It is one of the strongest and most popular family newspapers published.

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At Home and Abroad, the leading musical monthly publication of New York City, will be sent one year, with THE AMERICAN FARMER, for \$1.10, both papers postpaid. Every number of At Home and Abroad contains a collection of vocal and instrumental music that could not be bought separately in sheet form in the stores for less than 70 cents. Remember, that by our arrangement 12 numbers of this publication and THE AMERICAN FARMER for a year for only \$1.10.

These offers are open to all subscribers in connection with THE AMERICAN FARMER. Neither the Weekly Witness, Sabbath Reading, nor At Home and Abroad can be furnished by us without a subscription to THE AMERICAN FARMER for one year accompanying the order.

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Part 13. Number 13.

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The great majority of American farmers have a deep interest in the development of the ramie industry in this country. If we can once develop the manufacture of this fiber here it will be a source of wealth to our farmers greater than that of any one of their present products, except corn, wheat and hay. Ramie will grow luxuriantly anywhere from the north line of Pennsylvania to the Gulf; it will produce crops that are simply enormous. From 18,000 to 20,000 pounds per acre are possible on strong soils, where four cuts are made. Where irrigation is used six cuts per year are possible. It is easily grown and handled, needs very little cultivation, and does not exhaust the soil. The machinery for reducing it to a condition suitable for delivery to the factory is simple and inexpensive, and a few farmers could readily club together to purchase that capable of working up their joint crops, and which would be employed several months of the year by judicious arrangements of the cutting.

The fiber produced is the strongest in the world, being fully three times as strong as the best Russian hemp. It can be spun as fine as silk, and will make either the strongest cordage and coarse goods, or the finest and most beautiful cloths, hangings, table linen, tapestries, clothing, etc. It readily mixes with wool, flax, cotton or silk, takes the most beautiful dyes, and is, generally, an ideal fiber.

The whole world has long had a deep interest in it, and numberless efforts have been made to simplify its preparation, so as to bring about its more general use. So far the most of its manufacture has been in China, where labor is so cheap that it can be handled successfully. A great deal of the world's supply also comes from India. In Europe strenuous efforts have been made to introduce machinery into its preparation, with more or less success, and the same is true of this country.

The general opinion is that the trouble lies with the decorticators, but this is an error. The decortication, if done on the farm, and within a few hours after cutting, is as simple and easy as thrashing wheat. The decorticator is no more expensive than a thrashing machine. The trouble is in ungumming the fiber and separating it into strands. This is done in China and India by careful retting in water, repeated exposure to the sun, and pulling apart the strands by hand. This is work for the factory, not the farm, though it might be done on the farm if cheap enough labor could be had.

Inventors and capitalists in Europe and America have been striving for decades to get machinery and processes which will take the product as it comes from the farm and convert it economically into thread. There is "wealth beyond the dreams of avarice" for the man who succeeds in doing this, and an immense addition to the agricultural resources of the country in which it is done.

Mr. Slaughter, of Los Angeles, Cal., who has devoted himself for years to missionary work in behalf of ramie, is confident that this has at last been accomplished. Naturally, in a work of such difficulty and magnitude, there have been many sickening failures, all over the world. Visionaries, political schemers, incompetents of all kinds, have had their inevitable hack at it, but it is passing that stage and entering that of practical success. If the Government will now only give the work a little encouragement the industry will be firmly established, and a new product that will put untold millions of dollars into the pockets of the farmers will be given them.

The New Jerseyans are excited over the inhumanity of docking horses' tails and are agitating the passage of a law against it. A similar law has been put on the statute books of Massachusetts, but so far nothing has been done to carry out its provisions.

There is far too little money now in circulation among the farmers. How will it be when hundreds of millions more are taken away to be sent abroad for products which we should raise at home?

Why pay out \$130,000,000 a year to Cuba and Porto Rico for sugar that should be grown in Indiana, Illinois, Wisconsin, Nebraska, Kansas, Minnesota, Iowa, and the Dakotas?

THE TARIFF BILL.

The Tariff Bill is still hanging by the eyelids over the chasm of defeat. The situation is simply a great triangular game of bluff. There is not a particle of honesty on either side. All are "playing to the gallery" for points. The House of Representatives wanted to make a great showing of "Tariff Reform," to catch the workingmen and the more unthinking farmers. While they were making this specious showing in the House, the most clamorous "Reformers" were arranging with their Senators to save specified interests, with which powerful political bosses were connected, and whose injury would be reversed by their own political destruction. The Senate modified the bill so as to do vastly less harm than when it was passed by the House, and it carefully conserved the interests which the big bosses wanted cared for. There is no doubt that the Senate Bill would be vastly more acceptable to the country at large than the House Bill, though it is unquestionably an exceedingly vicious measure. Equally, it is beyond doubt that the members of the House themselves would much prefer it to their own bill. But they feel it is "good politics" to clamor and howl, as if they were suffering the keenest disappointment of their lives.

Next, the President comes in with a letter purely for political effect, which reflects in a most insulting way upon the Senate.

The Senate naturally and properly resents all this, and while justly open to censure on many points has still much more right and justice on its side than either the House or the President.

Its weakest point is in making the farmer's wool free, while retaining protection upon the coal and iron of the great corporations. There the President hits it the very hardest.

The "bluff" has seemed so strong all around that for awhile there appeared great likelihood that there would be a deadlock, and Congress would adjourn without passing any bill at all.

While this would be a veritable Godsend to the country, it hardly seems possible that the "Reformers" would commit suicide by so doing. Congress has been in session for a year now, and the business of the country has suffered beyond calculation by reason of the threatened assault upon every agricultural and manufacturing interest. The fear of what was going to be done has cost the country more than the entire money expenditure of the civil war. To end up by doing nothing would be such a lame and impotent conclusion as to bring down the fatal wrath of the whole people.

Our own opinion is, that after doing the bellowing and pawing around necessary for public effect, the House will accept substantially the Senate Bill, and this will be signed by the President while this month is yet young.

WHERE ARE THEY NOW?

Those tiresome people who have been preaching free trade as the great thing to increase the foreign market for our wheat and raise prices, are in a humiliating plight, if any demonstration of their folly could ever humiliate that class of defective reasoners. Would we sell another bushel of wheat abroad if we did not have a single custom house or revenue officer? It is simply idiotic to think so. Russia has an incomparably more stringent tariff than ours, and yet she sold England twice as much wheat last year as we did. The Argentine Confederation has one of those annoying, aggravating South American tariffs, and yet her sales of wheat to England increase by scores of millions of bushels every year. Both Russia and Argentina have been making their tariffs more rigidly exclusive, and yet they outstrip us in their sales to the country which is the great apostle of Free Trade.

The explanation is simple. Wheat is not bought on sentiment, but as a matter of business. The English grain merchant does not care a fig about the politics or religion of the wheat sellers. He is going to buy from whoever will sell him the cheapest. The Russians and Argentines are constantly underbidding the Americans in the wheat market of the world, and so increasing their sales. The only way that we can increase our sales is by underselling them, which we hope that our farmers will not attempt to do.

Instead of raising wheat to sell abroad at a loss, let us raise at home the \$300,000,000 worth of farm products which we now buy abroad every year. We will

be much better off if we never sell another bushel of wheat abroad.

GIVE THE FARMER A SHOW.

Really, the men who struck the men who arrogantly assumed that they were the only working people in the country, were suffering less than any other class. They had, at least, employment, with comparatively slight reductions of wages, and were able to provide for themselves and families. There are at least 1,000,000 workingmen who have absolutely nothing to do, and do not know where to turn to get bread and meat for themselves and families. There is simply no comparison between their condition and that of men who have been asked to take from 10 to 15 per cent. less wages than they received during prosperous times. Then, there are the farmers. If anybody has reason to feel like striking and fighting, one would think it would be the farmer. With a large proportion of his harvest destroyed by unfavorable conditions, and when he should naturally expect to get an increased price for what he did raise, prices have gone down with a run until to-day he is getting less than half the usual price for his grain. The selling price of wheat is below the lowest point known in this country. Yet while he is furnishing the workmen of the country with food at less than half the old prices, they are demanding of him the same prices for what they furnish him. This is a momentous fact that has been entirely overlooked in the discussion. While the farmer has had to sell his wheat for 40 cents a bushel, where he formerly obtained \$1, he has to pay the railroads the same for carrying it, his taxes to his County and Township have remained the same, and he has to pay the carpenter, the painter, the blacksmith, the machinist, the tailor, the bricklayer, and every mechanic who, directly or indirectly, works for him the same wages that he did when they were paying him twice as much for the food that he furnished them. If there is any workingman who should feel like going on a strike it is the farmer. He is suffering far more than any other workingman who has employment, yet he is not considered in the business at all.

THE RUSSIAN THISTLE.

By good management Senator Hanna, of North Dakota, succeeded in getting the adoption by the Senate of his amendment to the Agricultural Appropriation Bill appropriating \$1,000,000 for the extermination of the Russian thistle. The most notable convert to the support of the appropriation was Senator J. Z. George, of Mississippi, whose tenacious adherence to States' Rights views stood in the way of giving Government aid to work to be done within the States. But he became convinced that the evil was National in character, and too widespread for State Governments to successfully grapple with. He consequently gave the amendment his hearty support, and made an able argument in support of its constitutionality.

The bill has now gone to the House, where strong opposition has developed to accepting the thistle amendment.

WE regret to say that we do not see much silver lining on the wheat cloud. The incubus on the back of the market is the unknown quantity which Russia and Argentina will put into the market. The reports from Europe generally favor fair crops, so that the imports promise to be only moderate, and as the Russians and Argentinians will sell their grain at any price they can get, there is nothing to base hope of a rising market. The maintenance of a duty on wheat is all that prevents Russian and Argentine wheat being offered in this market.

The duty on ready-made clothing is put at 45 per cent, which must be a clerical mistake, as that on cloth is 50 per cent. No doubt this will be changed as soon as attention is called to it to the same rate as cloth. Under the McKinley law it is 80 per cent. We will say that a \$50 suit of clothes is now invoiced for duty at \$20; the duty would be \$16, of which \$1.31 would be on the wool in the suit, and the remaining \$14.69 on the labor employed in making. If the same suit is invoiced under the new law at the same price, the labor will receive \$10 protection, while the wool will receive none. This is the unjust character of the bill all through.

THE bank of Tempe, Ariz., has had to close its doors on account of the ruin of the wool growers, who were its main customers.

THE CROPS.

The report of the Statistician of the Agricultural Department for July shows that the corn acreage of the country has been increased 4,000,000 acres. The largest increase has been in Nebraska—18 acres in every 100. Minnesota comes next with 16 acres to every 100. The average condition for the whole country is 95, against 93.2 last year. This is much above the average for the past 10 years. The best condition is in Missouri—101; with Iowa, 100; Illinois, 99; and Indiana, Kansas and Nebraska 96.

The condition of Winter wheat is 83.9, against 77.7 for July of last year. Spring wheat, 68.4, against 74.1 last July. In New York, Pennsylvania, Kentucky, Ohio, Michigan, Indiana, Illinois, Missouri, Oregon and Washington Winter wheat is very fine, but bad in Kansas and California.

Spring wheat is very good in Wisconsin, Iowa, Washington and Oregon; tolerable in Minnesota, Kansas and North Dakota, and bad in Nebraska and South Dakota.

The condition of oats fell very strongly from June to July, and is now placed at 77.5, against 88.8 a year ago. Maine is in the best shape—103; Vermont, 93; Massachusetts, 94, Texas, 91. The condition is worst in South Dakota, Kansas and Nebraska.

Barley is placed at 76.8, against 88.8 last year. California is lowest, with fairly good condition in Minnesota, Wisconsin and New York.

Rye is 87, against 85.3 last year.

There was a small increase of acreage of potatoes—the largest in Ohio. The condition is 92.3, against 94.8 last year, and 90 in 1892.

Only three-fourths as much tobacco was planted as last year, and the condition is 81, with 90 to 100 reported from the New England and Middle States, Wisconsin, Missouri, Arkansas, Mississippi, Louisiana and South Carolina.

Rice is in bad condition in Louisiana and Mississippi, but fairly good in South Carolina.

Apples are very bad, condition only 47.6. New England, New York, Michigan, Wisconsin, Iowa, Kansas and the Mountain and Pacific States show somewhat better than this. Peaches 24.3 per cent, with a good crop in California and a half crop in New Jersey and Michigan.

Cotton shows up better than any other crop, with a condition of 89.6, against 82.7 last year. Virginia, North Carolina, South Carolina, Florida, Alabama, Mississippi, Louisiana, Texas and Arkansas show up best, with Georgia and Tennessee poorest.

The grasses and pastures show up rather poorly, owing to the drouth. The condition of clover is 80.2, against 92.6 a year ago. Timothy is 77.3, against 89.9 a year ago, and pastures 83.2.

ENTIRELY TOO ONE-SIDED.

It looks more and more as if there is a determined effort to array the workingmen of the great cities against the farmers. The workingmen are striving for the highest wages, and the lowest prices for what they have to buy. They want high pay for transporting the farm products to market, for doing every description of work for the farmer, and yet they want to pay the lowest possible prices for all that they buy of the farmer. They want to retain the highest wages for their labor in making clothes, and yet take the protection off the farmer's wool.

This is entirely too one-sided an arrangement to be satisfactory, especially to the farmers.

In 1870 family flour sold for \$7 a barrel; now it is \$2.40. Granulated sugar then sold for 13½ cents a pound; now it is 4½ cents. Molasses sold for 80 cents a gallon; now, 34. Factory cheese 16½ cents a pound; now 9½. Dried peaches 10½ cents; now 8 cents. Canned tomatoes, per dozen, \$2.55; now 80 cents.

The great lowering in price runs all through the list of farm products. The farmers get from 50 to 75 per cent. less for their labor; the mechanics, railway men, factory operatives, miners, etc., that much more.

The evil of the present tariff is that it intensifies this discrimination against the farmer, while leaving it on the things that he has to buy, where the workingmen have been strong enough to force protection to their special trades. It takes all duties off wool, but insists that

those who make the wool and cotton into clothes shall be fully protected against the sweating shops of Europe.

This should force the farmers into associations to protect their interests just as the workingmen do theirs.

The Wool Market.

BOSTON, July 25.—Receipts of wool the past week, 18,811 bales domestic and 1,128 bales foreign; sales, 10,011 bales domestic and 794 bales foreign. Market quotations—Domestic Wools—Ohio and Pennsylvania—XXX, 22½; XX and above, 21; X, 18½; No. 1, 16½; No. 2, 14½; No. 3, 12½; No. 4, 10½; No. 5, 8½; No. 6, 6½; No. 7, 4½; No. 8, 2½; No. 9, 1½; No. 10, ¾; No. 11, ½; No. 12, ¼; No. 13, 1/8; No. 14, 1/16; No. 15, 1/32; No. 16, 1/64; No. 17, 1/128; No. 18, 1/256; No. 19, 1/512; No. 20, 1/1024; No. 21, 1/2048; No. 22, 1/4096; No. 23, 1/8192; No. 24, 1/16384; No. 25, 1/32768; No. 26, 1/65536; No. 27, 1/131072; No. 28, 1/262144; No. 29, 1/524288; No. 30, 1/1048576; No. 31, 1/2097152; No. 32, 1/4194304; No. 33, 1/8388608; No. 34, 1/16777216; No. 35, 1/33554432; No. 36, 1/67108864; No. 37, 1/134217728; No. 38, 1/268435456; No. 39, 1/536870912; No. 40, 1/1073741824; No. 41, 1/2147483648; No. 42, 1/4294967296; No. 43, 1/8589934592; No. 44, 1/17179869184; No. 45, 1/34359738368; No. 46, 1/68719476736; No. 47, 1/137438953472; No. 48, 1/274877906944; No. 49, 1/549755813888; No. 50, 1/1099511627776; No. 51, 1/2199023255552; No. 52, 1/4398046511104; No. 53, 1/8796093022208; No. 54, 1/17592186044416; No. 55, 1/35184372088832; No. 56, 1/70368744177664; No. 57, 1/140737488355328; No. 58, 1/281474976710656; No. 59, 1/562949953421312; No. 60, 1/1125899906842624; No. 61, 1/2251799813685248; No. 62, 1/4503599627370496; No. 63, 1/9007199254740992; No. 64, 1/18014398509481984; No. 65, 1/36028797018963968; No. 66, 1/72057594037927936; No. 67, 1/144115188075855872; No. 68, 1/288230376151711744; No. 69, 1/576460752303423488; No. 70, 1/1152921504606846976; No. 71, 1/2305843009213693952; No. 72, 1/4611686018427387904; No. 73, 1/9223372036854775808; No. 74, 1/18446744073709551616; No. 75, 1/36893488147419103232; No. 76, 1/73786976294838206464; No. 77, 1/147573952589676412928; No. 78, 1/295147905179352825856; No. 79, 1/590295810358705651712; No. 80, 1/1180591620717411303424; No. 81, 1/2361183241434822606848; No. 82, 1/4722366482869645213696; No. 83, 1/9444732965739290427392; No. 84, 1/18889465931478580854784; No. 85, 1/37778931862957161709568; No. 86, 1/75557863725914323419136; No. 87, 1/151115727451828646838272; No. 88, 1/302231454903657293676544; No. 89, 1/604462909807314587353088; No. 90, 1/1208925819614629174706176; No. 91, 1/2417851639229258349412352; No. 92, 1/4835703278458516698824704; No. 93, 1/9671406556917033397649408; No. 94, 1/19342813113834066795298816; No. 95, 1/38685626227668133590597632; No. 96, 1/77371252455336267181195264; No. 97, 1/154742504910672534362390528; No. 98, 1/309485009821345068724781056; No. 99, 1/618970019642690137449562112; No. 100, 1/1237940039285380274899124224; No. 101, 1/2475880078570760549798248448; No. 102, 1/4951760157141521099596496896; No. 103, 1/9903520314283042199192993792; No. 104, 1/19807040628566084398385987584; No. 105, 1/39614081257132168796771975168; No. 106, 1/79228162514264337593543950336; No. 107, 1/158456325028528675187087900672; No. 108, 1/316912650057057350374175801344; No. 109, 1/633825300114114700748351602688; No. 110, 1/1267650600228229401496703205376; No. 111, 1/2535301200456458802993406410752; No. 112, 1/5070602400912917605986812821504; No. 113, 1/10141204801825835211973625643008; No. 114, 1/20282409603651670423947251286016; No. 115, 1/40564819207303340847894502572032; No. 116, 1/81129638414606681695789005144064; No. 117, 1/162259276829213363391578010288128; No. 118, 1/324518553658426726783156020576256; No. 119, 1/649037107316853453566312041152512; No. 120, 1/1298074214633706907132624082305024; No. 121, 1/2596148429267413814265248164610048; No. 122, 1/5192296858534827628530496329220096; No. 123, 1/10384593717069655257060992658440192; No. 124, 1/20769187434139310514121985316880384; No. 125, 1/41538374868278621028243970633760768; No. 126, 1/83076749736557242056487941267521536; No. 127, 1/166153499473114484112975882535043072; No. 128, 1/332306998946228968225951765070086144; No. 129, 1/664613997892457936451903530140172288; No. 130, 1/1329227995784915872903807060280344576; No. 131, 1/2658455991569831745807614120560689152; No. 132, 1/5316911983139663491615228241121378304; No. 133, 1/10633823966279326983230456482242756608; No. 134, 1/21267647932558653966460912964485513216; No. 135, 1/42535295865117307932921825928971026432; No. 136, 1/85070591730234615865843651857942052864; No. 137, 1/170141183460469231731687303715884105728; No. 138, 1/340282366920938463463374607431768211456; No. 139, 1/680564733841876926926749214863536422912; No. 140, 1/1361129467683753853853498429727072845824; No. 141, 1/2722258935367507707706996859454145691648; No. 142, 1/54445178707350154154139937

THE PEQUOT'S CAVE.

A Revolutionary Fourth of July Incident.

BY J. B. CONNELLEY.

3AY WHAT YOU WILL, MISTRESS Rachel Enderby, yet well assured am I that a woman's eyes—yes, and her heart—will ever turn from the lover in homespun to the one in a fine uniform."

"Then it would be the clothes and not the man should please her, and she should die of love for a haberdasher's shop."

"Nay, nay, I mean not that; but now, in good sooth, would you not rather see a man in a gay red coat than a ragged brown one?"

"I am not fond of red. I take it for a garish and insolent color."

"It is that of men loyal to their King."

The girl shuddered her shoulders and curled her lip. Her father, Nathan Enderby, was a Quaker, and she had been trained, as the women folk of the Friends generally are, even to this day, to caution in the use of that "unruly member," the tongue; so though she liked it not that William Tolliver, who seemed to her lover and had, indeed, begun to win some place in her regard—should show himself a King's man, she held her peace while she could. But the young fellow noted neither the shrug of shoulder nor curl of lip, and went on:

"And as for the ragged fellow who would see you once to see what a band of scoundrels they are, you would never have done laughing at them."

"Nay," she replied, with a glitter in her eyes that should have warned him, "I do not think I would laugh at brave men fighting for their families, their homes and their rights as men, however they might be clad. High aims are better than brave attire; tattered raiment covers noble hearts."

"Noble! Why, they have not a person of quality among them. Did you ever see a real nobleman, Mistress Rachel?"

"Those who called themselves so, yes. We lived in Philadelphia, she knows, before my father inherited this little

estate from his brother and came here to live. There I saw 'Lords' enough, and to me they looked no better than other men, oftentimes worse."

"Ah! You would not say so of Lord Fitz-Eustace Gordon; one so proud and yet so gracious, so finely garbed, with such courtly manners and condescending smile, and, withal, so devoted to his Glorious Majesty, the King."

"And where has he seen this paragon, so well to note and know him? They speak of him as one who should say, 'my friend Jack.'"

"Nay, nay, not that, exactly,—but" she hesitated, colored, and stammered for a moment, suddenly realizing that his too flatterer had betrayed him into a grave indiscretion; then, recovering herself, sought to carry the conversation to a safe ground, saying, "That I may not tell you now, but in good time you will know, and perhaps I shall be able to obtain sight of him for you."

"The need not trouble yourself there. I am not to know Lords, and the only sight of one that could gladden me would be the back of the last of them leaving this land forever."

William Tolliver was shocked, and said so; even her utterance actually trembled, and said that, too, with a faint wincing a breach between him and Rachel that would never be bridged again. And while the erring youth went away homeward, saying to himself, "Let her talk as she will, she cannot hold out against the red coat," Rachel was reflecting, "Glad am I to know his heart is liking him too well. The lack of my hand to you henceforth, Mr. King."

When Rachel's father returned from the mill that evening he brought with him, in the wagon, a young man sorely wounded, whom he had picked up in the road, where some assassin had left him for dead. The old Quaker, having some skill in leech-craft, laid the still insensible lad upon the kitchen table, the better to get at his hurts, and with what aptitudes and bandages he had at command managed to staunch, at least temporarily, the blood flowing from an ugly bullet-wound in his side. It was high time, for though the wound was not grave, merely a deep, glancing furrow along a rib, it had well-nigh drained life away already. Soon, however, when the bleeding was stopped, the young man recovered consciousness and was able to give account of himself. He was, he said, Capt. Jared Seagrave, recruiting for the patriot army, and some cowardly

"cowboy" skulking in ambush, had attempted to assassinate him on the highway."

Rachel saw before her a rebel almost as badly clad as William's fancy had depicted, but she had no thought of laughter. Instead of that, all her tender, womanly sympathy was stirred with pity for him, and indignation for the wretch who had done the dastardly deed, and it was only after she had grown more calm and gazed upon him while he slept, that she thought how handsome he was and worthy of some woman's love.

After a while the Captain became feverish, waked suddenly, and tried to leap from the bed where they had laid

him; an exertion that started his wound to bleeding afresh and alarmed Nathan Enderby.

"Much I fear," said he, "that without the aid of a leech I shall not be able to keep the life in him. The case goes beyond my skill. There will have to watch with him while I go for Dr. Goodell."

"Nay, father; thou wilt remain and I will go. Thy care is at least better than mine, and I will be safer going. The cowboys would be like to shoot thee from thy horse; but me they will not see, for I shall dress me darkly, make no noise in going, and run all the way. It is bare two miles, and there is little moon."

"As thou wilt, my child. It is hazardous; but that must not stand in the way of duty."

In a few moments Rachel had donned a dark-brown dress and hood, drawn a pair of stockings over her shoes, and vanished in the murky shadows of the forest which almost all the way, lay heavy upon her path. Half the way to the doctor's she had traversed without incident, moving fearlessly, but with all her senses keenly alert, swiftly, but noiselessly, as the passing of the shadow of a cloud. Then, as she reached the bottom of a dark little ravine through which a brooklet rippled, she heard voices of men coming toward her. Quietly as a night-moth she flitted from the road and lay down behind a log under a thicket of brush, close at one side. Immediately in front of her a footpath ran away from the main road, following the course of the small stream to a more important highway, known as "the lower road," which led to New York. Before this path stopped the two men whose conversation she had heard, and one of them she recognized by his voice as William Tolliver. The other was, so far as she could make out in the obscurity, a stranger to her.

"Shall I not accompany your Lordship to the end of the path? It is a good half mile, and dark," said William.

"No. It is not necessary," replied the stranger. "I can find my way where I have been once, even in the dark. Go back to your comrades and urge them to vigilance. Guard the roads well, and if you discover any more rebel emissaries seeking to entice your young men to treason, serve them as you did the one to-day. That was a good shot, and will not go unrewarded."

"Oh! Thank you, my Lord," responded William, with a bow that merged into a cringe.

"Get all the recruits you can, have every man of them in the Pequot's Cave on Monday night, and with the aid of the soldiers I shall bring up we will give treason such a blow that it will never rear its ugly head among these hills again."

"I will have 37, at least, and hope for more, my Lord."

"Excellent. Remember that your reward will be proportionate to your zeal. I have promised you the King's commission for the attempting of the enterprise, but upon its success depends the measure of your reward in sharing the confiscated estates of the rebels. Therefore, do your utmost."

"Your Lordship may rely upon me."

"I do. Good night."

"Good night, my Lord. Good night."

The stranger plunged into the path-way and disappeared. William turned and retraced his steps the way he had come. Rachel, allowing him time to get a little ahead, left her concealment and glided after, for he was going in the direction she had to travel. He soon left it, however, turning off into a gorge that, as she knew, led straight to the cavern locally well-known as the Pequot's Cave, which she rightly inferred, from what she had heard, was a place of rendezvous for the cowboys, among whom she now understood he was a leader. She could not see him in the gorge, but heard his steps going farther and farther off, so had no apprehensions about continuing on her mission, which afforded her no further adventure.

Luckily she found Dr. Goodell at home, and in a few minutes he was out, with her beside him, in his stout little gig, en route for the Quaker's. He had no fear of being stopped or meddled with by either cowboys or patriots, for his white horse was known all over the country side, and universally regarded as a sort of animated flag of truce which had an unquestionable right to go anywhere. Subsequent events proved that

the doctor was a good patriot; but Rachel was not yet aware of the fact, and prudently said nothing to him of the weighty secret she had surmised. When he had properly cared for the wounded officer and taken his departure, she told all to her father.

"There has learned of a sad thing," said the old man, reflectively, "for, of a truth, those sons of Belial plot the working of much wickedness. But perchance the Almighty may see fit to set their counsels at naught. Were I not a man of peace I would that I might be chosen as His instrument,—for, verily, I think I can see a way."

Rachel asked no questions, for, as she well knew, to do so would be useless; but when he said he thought he could "see a way," her anxiety was not a little mitigated. Nevertheless there was much to fear. Most of the vigorous young patriots had already joined the army, and those who had not were scattered and without organization; while the cowboys were organized, would have the help of British soldiers in dealing the threatened "blow to treason," and the time of preparation for resistance was short, one day less than a week. That an adequate force of defenders could be expected from Gen. Washington's small army, on the other side of the Hudson, many miles away, was not to be thought of, and the girl rightly divined that the purpose of William Tolliver and his noble friend was the butchery, in detail, of the patriot families in the neighborhood, and the pillage and burning of their homes.

But Nathan Enderby, smoking his pipe by the kitchen fire, after long cogitation smiled grimly and said softly to himself: "If regulars and cowboys are to operate together, they will not risk such mistakes as might well happen in the dark; so if they meet on Monday night they will not deal their blow to treason before dawn. I must not raise my hand against my fellow man, but if I can prevent his doing evil it is my duty to do so; and if it be the Lord's will, I believe those who meet in the Pequot's Cave will be late in keeping engagements the next day."

Capt. Seagrave, having rugged health, vigorous youth, and a strong will, began to mend as soon as the blood was stopped from running out of him, and as his hurt was only a flesh wound, in a couple of days he declared himself strong enough to get back to the army and report. But to that neither the doctor nor his nurse would consent, and perhaps the negative of the latter had most weight, for though their acquaintanceship was too new for words of love between the Captain and the Quaker maid, their mutual glances were already an unmistakable prelude thereto.

"Wait until Saturday," said the doctor, "and I will take you over to the river in my gig."

"And when there is ready to depart I shall have something of importance to tell thee," promised Mr. Enderby, "whereby thou mayest do good service to the patriot cause."

The program so arranged was accepted by the patient, and in good time carried out, including the Quaker's confidence, which, whatever it was, seemed to greatly excite the Captain and make him so impatient to be gone that he quite forgot the pretty speech he had purposed making to fair Mistress Rachel. But surely he looked it, for she turned red as a cherry, and when he was gone mused and smiled as if at happy thoughts.

On Sunday morning Mr. Enderby said to his daughter:

"Come with me to the Lord's great meeting house, the woods, Rachel. It is

no more meet to drowse than to labor on the Lord's Day, and thou shouldst know what I can only tell thee there." As they walked together, ascending ever higher until they reached the flat top of the hill, which was almost a mountain, he cautioned her, "Take heed of the way thou goest, that thou mayest find it again, even in the dark; though," he added meditatively, after a little pause, "the moon now enters her second quarter, and there is light enough." At length he stopped at the brow of the hill overlooking a deep gorge which seemed to start just before him, and said, inquiringly, "Thou hast never been here before?"

"No, father, not exactly here, that I remember, though I have often been on the hill."

"Exactly here thee is standing right over the Pequot's Cave. Its mouth is at the head of this ravine."

"Is there not danger of the cowboys seeing us as we spy upon their haunt?"

"No. To keep the secret of their place of meeting they avoid it by day. Twice during the past week I have been all through it. Now attend. See that little cedar, thickly branched down to the ground, with the big rock close to it, and the dead tree. There will know how to find it again?"

"Certainly."

"Lightly scrape away the leaves about its stem and see what thou findest."

"Something that looks like a thin, black rope tied to the little tree."

"Cover it up as it was, and come

away. As we walk I will tell thee all about it."

William Tolliver's pernicious activity was successful in bringing together in the Pequot's Cave, on Monday night, no less than 41 men. Whether they all knew the infamous work they were expected to do cannot be determined, as some of them—most indeed—swore afterward that they did not, prior to the revelation made by Lord Fitz-Eustace Gordon at their meeting. Others admitted that they had been promised shares of the confiscated estates of the rebels after the restoration of peace, and a few seemed to have been content with a promise of wearing red coats and serving as regular British soldiers under "Capt." Tolliver—such being the rank he confidently expected.

Lord Gordon was a dissipated-looking man of middle age, with a supercilious stare that alternated with a gracious smile which he had the power of assuming suddenly, as if he worked it by pulling a concealed string.

"To-morrow," he said, addressing the cowboys, "will be the anniversary of the rebels' crowning act of audacity, the culmination of their treason in the adoption of the insolent defiance to the Most Gracious Majesty, which they call their 'Declaration of Independence.' It is fitting that the Fourth of July should be made the occasion of teaching them

such a lesson of the fruits of treason as they will never be able to forget, if, indeed, you leave any of them alive to recall it."

William Tolliver presented a list of the houses of patriots within reachable distance, and the plans for attacking them separately by detached squads, each accompanied by a detail of soldiers to give a military color to the massacre, were carefully arranged. The soldiers, it was stated, were already waiting on the lower road and would be marched up a little before daylight.

Much less confidence would the conspirators have had in the outcome of their enterprise could they have seen what the owl, in a tree-top on the hill, saw going on above their heads. He saw, about midnight, a young girl, in a brown dress which made her almost invisible, kneeling at a little cedar tree and scratching the leaves away from about its stem; then he saw her take from some small vessel a piece of "punk," from which she blew a little cloud of white ashes, revealing the surface of a glowing coal. Then, to his bewildered surprise, he beheld a little sputtering spot of fire start from her hands and go rapidly down the hillside, as if carried by a crawling snake. Having never heard of a fire he could not understand it, and was in no degree prepared for the terrible combination of thunder clap and earthquake which suddenly tumbled him off his perch and sent him flying fast and far as he could, for dear life. What became of the girl he had no idea, she disappeared so suddenly.

But the shock to him was nothing to what it was to the cowboys. Tolliver was busy dividing them into squads and giving them their several orders, when suddenly an awful explosion seemed to rend the earth; a great part of the roof near the entrance of the cave fell, completely closing the exit with a mass of rocks and at the same time extinguishing their lights and filling the air with a suffocating cloud of sulphurous smoke and dust. Shrieks of terror and cries of pain mingled with the rumbling echoes of the explosion. The peaceful Quaker, simply to deter them from getting out to do evil, had placed a keg of powder in a deep fissure of the rock, just above the cavern's mouth, tamped it well, and connected with it the fuse that ran up to the hilltop. He had no mind to do bodily harm to any of them, of course, but if it should happen to be the will of Providence that any should incidentally get hurt, that he felt was not a matter for his concern.

The noise of the explosion was heard by the British soldiers half a mile away, and while they were still wondering and conjecturing uneasily what it might be, they were suddenly set upon by a determined band of patriots from the American army, who made up in ferocity what they lacked in numerical strength, and quickly put the "rebels" to ignominious and disastrous flight. Capt. Seagrave led the little detachment of patriots, and it was due to the skill of Quaker Enderby, as spy and guide, that he was able to pounce upon the royalists, the old man having led him to them while Rachel was climbing the hill. That the exertions he made in slaying the redcoats set the young Captain's wound bleeding afresh seemed to him rather fortunate, as it procured him once more the attendance of his fair nurse before he could return to camp.

When the captives in the cave were let out, one by one, the rocks having been sufficiently removed for the purpose, many of them were found seriously injured, but only one killed outright, and that was the English Lord. Tolliver escaped with the loss of one eye and his

whole nose, but gained more sense, for he wanted no more to do with the war.

A couple of years later, when peace was declared, Capt. Seagrave and Rachel Enderby were married, and their descendants are still living near the Pequot's Cave.—*Democrat's Family Magazine.*

Weight of Fleeces.

The Statistician of the Agricultural Department reports a constant increase in the average weight of the fleeces of this country, due to greater care in feeding and providing for sheep, and the improvement of the breeds. This year the average weight of all the fleeces in the country was 5.33 pounds against 5.3 pounds last year, and 5.15 in 1890. The heaviest fleeces were in South Dakota, 7.5 pounds, and the lightest in Alabama, 2.5 pounds. The following table shows the average weight by States:

States and Territories.	Average weight per fleece, pounds.
Maine.....	5.1
New Hampshire.....	5.8
Vermont.....	6.2
Massachusetts.....	4.9
Rhode Island.....	4.9
Connecticut.....	4.3
New York.....	4.5
Pennsylvania.....	4.7
Delaware.....	4.5
Maryland.....	5.1
Virginia.....	3.7
North Carolina.....	3.0
South Carolina.....	3.1
Georgia.....	3.7
Florida.....	3.3
Alabama.....	2.5
Mississippi.....	3.9
Louisiana.....	2.9
Texas.....	5.1
Kansas.....	5.5
Nebraska.....	5.8
Minnesota.....	5.4
Wisconsin.....	5.7
Illinois.....	5.6
Indiana.....	5.7
Ohio.....	5.1
Michigan.....	5.7
Indiana.....	5.7
Wisconsin.....	5.7
Minnesota.....	5.4
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Indiana.....	5.7
Ohio.....	5.1



What There is Ahead.

The corn plowing season will soon bring on a flirtation between the rattle-snake and the bare toe of the farmer boy. —*Cleveland Plain Dealer.*

Paste This in Your Pocketbook.

"Er man kin run into debt," said Uncle Eben, "but when it comes ter gittin' out he's gotter crawl." —*Washington Star.*

What They Prefer.

She—My three school-girl cousins are coming to-morrow to stay a few days.
He—My goodness, Maria, you'll have to order a lot more meat and things.
She—No I won't. I've ordered a dozen bottles of pickles and half a ton of candy. —*Truth.*

Why He Was Invisible.

Papa—Was Mr. Sandymen here last evening? I looked into the parlor and saw no one but you.
Clara—Why, yes, father, he was there.
Papa—Strange I didn't see him.
Willie—I guess he must have got into the chair first. —*Life.*

The Cow Stared.

Fair Maiden—How savagely that cow looks at me?
Farmer Hayseed—It's your red parol, mum.

Fair Maiden—Dear me! I knew it was a little bit out of fashion, but I didn't suppose a country cow would notice it. —*Pearson's Weekly.*

What was Required.

Business Man (hurriedly)—What do you want to get me to the Grand Central in five minutes?
Cabman (thoughtfully)—A new horse. —*N. Y. Weekly.*

More City Ignorance.

Farmer Tibbets—Hang that cow! I always have to club her 'fore I can make her stand still.

Little Nephew (from the city)—Is that the one that gives the whipped cream? —*Chicago Tribune.*

An Unsolved Mystery.



Mike—Begobs, Bridget, they be as short as iver!
Bridget—Divil take them! after me puttin' tin inches av cloth at their top. —*Judge.*

They Thought Alike.



Both of them—What funny things we see! —*Judge.*

Setting an Example.

"Are these the biggest china eggs you have?" asked the customer.
"Yes, sir. They are the usual size."
"You see, I'm just going into the poultry business, and I would like as large nest eggs as I can get, in order to give the hens an idea of the size I expect them to attain with their product."

A Humanitarian.

Humane Officer—Why do you pile all your load on the front of the cart?
"Lazy man—So the horse won't have so far to pull it, av course. Think I ain't got no feelin'?" —*Cleveland Plain Dealer.*

He Did Not Keep the Article.

Young Lady (in music store)—Have you "A Heart that Beats with Love"?
"Clerk (blushing)—No, miss; I would consider it highly imprudent at a salary of 21 marks a week. —*Wespen, Berlin.*

One Interpretation.

"Josiah," said Mrs. Cornosol, "this industrial army business gets me." "It do me to," he replied. "Ef a feller is goin' ter walk jis fur the sake of walkin' an' gettin' nowhere, he might jes ez well do it behind er plow ez any other way." —*Washington Star.*

"Oats seem to have the 'call.'" Compared to other grains they command a much higher price, and seem destined to maintain that position for some time, at least.

THE ORCHARD.

Cullings.

Apples are this year for the first time among the fruit shipments from California to Eastern markets.

A dispatch from Marshfield, Wis., says: Thousands of dollars' worth of damage is being done daily by the ravages of the army worm in this and adjoining Counties. It is by far the worst scourge that has ever visited this portion of the State.

According to the Ontario crop report, fruit prospects are very encouraging. While in some few places the rain and frost have done some damage, on the whole the prospect for good crops were seldom better. Throughout the fruit belt promises well, and a large crop of apples, peaches, plums, etc., may be expected.

Young orchards of one and two years planting have been very badly injured in the southern part of Illinois by 17-year locusts; notably those planted last Spring. All orchards are in good condition and making a healthy growth, so that they will mature well what fruit they have and be ready for next year in good shape.

Twig blight, affecting apple trees, has been extraordinarily prevalent this season. It is difficult to say what causes the malady. Some varieties are injured so much that they are no longer worthy of a place in the orchard, notably the fine old Fall Pippin. The trouble may depend on conditions of the soil in part.

When an orchard comes to bearing no crop should be grown in it other than its own fruit, and an annual supply of fertilizer should be given. It is asserted that sweet potatoes are a suitable crop to be grown in orchards in the South; that they are a crop which improves the soil, and thus adds to the orchard's growth, but this does not apply to orchards in bearing.

Ohio has a Black Knot fall, and it is hoped that other States will follow her example. The disease is widespread in the United States, and it must either be headed off or the plum trees and the acid cherry trees will be swept out of existence. If unchecked, it proceeds to inevitable destruction. The Ohio law and similar laws, if faithfully executed, would stamp it out.

The pear-tree scylla is one of the most destructive insects that infest pear orchards, as it sucks the juices from the foliage and exudes what is known as "honey dew," which covers the leaves and causes them to shrivel and the fruit to fall off. Mr. Geo. T. Powell, a successful New York grower, believes he has proved that the adult insects can be killed by the use of insecticides, although scientists have held the contrary.

The young peach trees, cherry trees, pear trees, etc., budded last Summer or Fall, will now be growing rapidly if they are receiving proper attention in the way of cultivation. Buds a foot or more high are in danger of blowing over, and occasionally one will start to grow out almost horizontally instead of perpendicularly. In both these cases it is a good plan to tie the bud to the stake. It need not be tied closer than an inch, and so it will be in an upright position.

Train the trees young. The best authorities say that only the pocket-knife should be used for pruning apple trees. This is only another way of saying that the pruning should be done early, before the branches have attained any great growth. Discover whether the limbs need to be cut off before they have reached the size of the arm. Prune the young trees so that they will form an even head, giving the heaviest amount of shade on the south side to shield from the hot sun.

Many reported cures for peach yellows have been investigated and found without merit. Faithful trial has been made of various fertilizers containing important plant foods. With some of these, especially caustic lime and fertilizers containing nitrogen, it has been possible to make diseased trees put on a greener and more vigorous growth, sometimes mistaken for recovery, but all such trees have continued to show symptoms of the disease and have soon relapsed into feeble growth.

A Cheap Mushroom Bed.

According to the *Musee des Familles*, the following is a very simple and cheap method of preparing a mushroom bed that will yield a crop all the year round. In a pine box about 20 inches in depth, and three feet square, place a four-inch-thick stratum of a mixture of three parts of dry cow manure and one part of garden soil. Having procured some mushroom spawn, break it up and sow it in a second stratum of manure and earth two inches in depth. Slightly compress the whole and cover with an eight-inch layer of earth, which should be kept damp by watering through a fine rose.

In six or eight weeks the first crop of mushrooms will appear at the surface, and will continue to do so for at least two years, provided the bed is kept damp.

A small quantity of aqua ammonia added to the water with which the bed is moistened will hasten the appearance of the fungi.

The box should be placed by preference in a place where the light is not too bright, say, in a cellar in which the temperature is moderate and equable, or in a dark part of a stable.

The Delaware and Maryland Peninsular is making ready for a great tomato crop, grown not so much for immediate consumption as for canning. Last year was a bad tomato season, and it is expected that this will be a good one. The area in tomatoes is larger from year to year, and the cost of production is lower. So, too, is the cost of canning, and the consumer gets at least part of the benefit of all this cheapening.

The principal agricultural product of Germany is potatoes; the second hay; the third is beets.

THE DAIRY.

The question of pasturing orchards with sheep has two sides to it, and much has been said on both sides, as might be expected from men holding positive convictions and some unfavorable experiences on the subject. Experience goes to show that the orchards of the country are losing fertility and for this reason are becoming unprofitable. It is found, too, that worms of various sorts, particularly codling moth, which passes its larval state in the apple. The apple worm, as it is called, does great damage to the crop in causing the fruit to ripen prematurely, when it falls to the ground, the worm abandons the apple, passes into the ground, and finally comes out as a fly to repeat its work on a broader scale. To head off this enemy of the apple grower, the fallen fruit must be removed as soon as it falls and be destroyed, worm and all. Many farmers pasture the orchards with hogs, and find great advantage in the practice; but there are several objections to this that must ever prevent its entire practicability.

No animal has so many favorable considerations for this purpose as the sheep. While there are some serious objections to making a sheep pasture of the orchard, these are so readily and effectually overcome that there no longer exists a single objection to this mode of caring for fruit trees. The soil is enriched by their droppings; all weeds are destroyed; no briars or sprouts are permitted to grow; the fallen fruit is consumed as fast as it falls, and the codling moth is effectually headed off—eaten up.

To show how to prepare the orchard for sheep, we prefer to let Judge Biggle, a prominent authority on practical farm topics, give his carefully-prepared plans on this subject. In his No. 169 article to the *Farm Journal* we find the following: "I promised to give your readers some pointers on seeding down an orchard for sheep pasture. My apple orchard is eight years old and the trees are about ready for work; already have borne a partial crop. The ground has been under cultivation most of the time; other crops have been taken off. I purpose seeding down a part, 20 acres, to grass, on which I will pasture 10 sheep to the acre. A sheep-tight fence is being built of plain wire and iron posts. Each tree will be protected from the teeth of the sheep by wire netting wound around the trunk; otherwise the bark would be gnawed and stripped off, and the orchard ruined.

"I shall plow the orchard in April about four inches deep, and harrow the ground thoroughly, making it as even and level as possible, with slight ridges at the tree rows. The seed will not be sown until the ground shall have time to settle with Spring rains, and until another thorough harrowing with the Acme harrow. After an application of 600 pounds per acre of Mapes' potato manure, spread with the Spangler machine, the seed will be sown with a Thompson's broadcaster and harrowed with a Breed's weeder, finishing with a roller.

"I will use 40 pounds to the acre of grass seed, as follows: Kentucky blue, 15 pounds; orchard, seven pounds; sheep fescue, three pounds; meadow foxtail, two pounds; timothy, five pounds; white clover, five pounds; red top, three pounds.

"These varieties have been selected with great care, and are believed to be just about right for my land. The main dependence for pasture, eventually, is the blue grass and white clover, but the others will serve to thicken the sod and to make early and late pasture; the timothy is intended to make a crop to mow the present season; for I do not think the pasture will be ready to turn sheep on until next year, but will yield a good crop of hay in the Summer or early Fall, as the soil is rich.

"It is intended, after the manner of J. S. Woodward, of Lockport, N. Y., to pasture short (at the same time feeding grain to the sheep), so that no tough sod will form to the injury of the orchard. The sheep, if well fed, will enrich the ground with their dung, and pick up the fallen apples, thus disposing of the worms that are so apt to despoil the fruit.

"I have well considered this plan, and have great confidence that it will work to my advantage; but whether good or bad, I will keep your readers advised."

A Cheap Mushroom Bed.

According to the *Musee des Familles*, the following is a very simple and cheap method of preparing a mushroom bed that will yield a crop all the year round.

In a pine box about 20 inches in depth, and three feet square, place a four-inch-thick stratum of a mixture of three parts of dry cow manure and one part of garden soil. Having procured some mushroom spawn, break it up and sow it in a second stratum of manure and earth two inches in depth. Slightly compress the whole and cover with an eight-inch layer of earth, which should be kept damp by watering through a fine rose.

In six or eight weeks the first crop of mushrooms will appear at the surface, and will continue to do so for at least two years, provided the bed is kept damp.

A small quantity of aqua ammonia added to the water with which the bed is moistened will hasten the appearance of the fungi.

The box should be placed by preference in a place where the light is not too bright, say, in a cellar in which the temperature is moderate and equable, or in a dark part of a stable.

The Delaware and Maryland Peninsular is making ready for a great tomato crop, grown not so much for immediate consumption as for canning. Last year was a bad tomato season, and it is expected that this will be a good one. The area in tomatoes is larger from year to year, and the cost of production is lower. So, too, is the cost of canning, and the consumer gets at least part of the benefit of all this cheapening.

THE DAIRY.

Skimmings.

Salting with brine is not effective. Excessive feeding of Swedish turnips makes the milk bitter.

Prof. Weigman attributes oily butter to iron, which comes from the use of poorly tinned vessels.

Buttercups and other varieties of the ranunculus in the pasture are generally responsible for the bitter taste in milk and butter.

Salting with one-half to one and one-half ounces per pound increases the total weight of butter about 12 per cent. The unsalted butter has a larger water content than the salted.

Soapy milk has been found to be caused by damp, foul straw upon which the cows were bedded. This abounded in bacteria, which got on to the udders and thence into the milk.

J. Seidl finds that weak brine up to 10 per cent. is not fitted for preserving butter, and that saturated brine cannot be relied on, even when the butter is kept in a cool place. Brine is likely to give butter a "heat" taste.

The best temperature for creaming in deep-setting is 45°. No advantage was found in heating from 93°-110° before setting. The addition of 10 to 25 per cent. water appeared to slightly improve the thoroughness of creaming.

Prof. F. Frus finds that nearly one pound of water can be worked into 25 pounds of butter after it is made, but it lowers the grade and injures the keeping quality. Butter worked only once contained nearly .05 per cent.—one-half pound in 100 more water than that worked several times. The longer the interval between salting and the last working, the less water was found in the butter.

A correspondent of Hoard's *Dairyman* writes of an experiment which he says he made of feeding tallow to his cows to test the question whether fat given in the food found its way to the butter and increased the proportion of it in the milk. He states as the result that the yield of butter was increased from one pound in 23 pounds of milk to one pound in 18 pounds, an increase of nearly one-third.

Dr. Henry Leffman, who has given milk and butter his attention, and who has conducted many valuable experiments with them in the laboratory, gives the following as a test for distinguishing butter from imitations: A spoonful or two is placed in a narrow cup and quickly heated to the boiling point. If it is true butter it will boil quietly and foam up in a mass of fine bubbles, often overflowing the cup. If it is butterine or oleomargarine the sample, when heated, will foam up but little and sputter as it boils. The test is regarded as infallible for detecting spurious butter.

Experiments made at the Texas Station go to show that the great influence of the kinds of food, or the fats in the food of cows, have on the quality of the butter made, and also on the fat of animals fed upon it. The butter is considerably harder, as is also the fat of the meat. Thus it becomes of interest to butter-makers to use the cottonseed meal in the Summer, as the hardness of the butter, increased considerably by this food, enables it to be carried more easily in the Summer.

Caked udders in cows are usually due to overfeeding with stimulating food, such as corn or other meal. Herbivorous animals are provided with a stomach adapted for the digestion of coarse, bulky food, and when concentrated food of any kind is given it is safest to mix it with coarser stuff, as hay or grass or silage. It is then better digested and disposed of in the system. But even in this way too rich food—that is, anything containing any element of nutrition in excess—will be injurious, as stimulating the action of some special organ, as the kidneys or the liver, unduly, and this will surely cause trouble.

SAVING STEPS

By Providing Plenty of Small Conveniences.

EDITOR FARM HOUSE: I will begin by telling some of the busy housewives how we save ourselves steps without number by having in every room as nearly as possible the following articles: A mangle or catwalk, a pair of scissors, a small box or tiny basket containing a few needles, black and white thread, a thimble, and a few wringing twine. Many a trip downstairs has been saved in the course of years. To need a little rip in a dress one is about to put on or to sew a button on one's boots is just nothing if the things are at hand, but if it includes a trip downstairs when one's feet are already tired, then it becomes a task that it is sometimes excusable to neglect or postpone. I go so far as to keep a small hammer and a few nails and tacks in a sly place upstairs. Every little convenience of this kind counts for so much in housekeeping. Hang a pair of scissors over your work-table in the kitchen and notice how many times, especially on cooking or ironing days, these scissors will be in demand. I wonder if you all know how many and varied are the uses to which the mass of all sorts of paper that comes into the house may be put. For lining drawers and covering shelves when needed, and when replaced by fresh ones they serve for rubbing the outside of pots, pans, etc., and hanging on the hooks from which they are hung, protecting the wall. Paper bags, carefully handled, as sorted, and put in a clean, convenient place, have many uses in the kitchen. To young housekeepers let me say, if callers should hinder you about your work teach yourselves not to fret over things; remember, it is not care and worry, but fret and worry, that make so many of us the "bundle of nerves" we are. How much better for us to have pleasant, quiet homes than to be over-anxious about that, and the other, and so soon wear ourselves into a state of health from which we may never perfectly recover—at least only after long years of suffering. —A FARMER'S DAUGHTER, Leyden, N. Y.

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A Good Word for Farm Work.

EDITOR FARMHOUSE: I am much pleased with the contents of *THE AMERICAN FARMER*. I am a farmer's daughter, and also a farmer woman. I don't mean to say that I do all the work on the farm; but all that hinders is the lack of strength.

"For to plow and to sow,
For to reap and to mow."

I look after things on our farm and do lots of outdoor work, too. I don't think any one on our place can feed my calves, pigs, and hens better than I; so I feed and care for them. I milk six cows and take care of all the milk and cream; do the churning by hand with an old-fashioned dasher churn, and care for the butter. I do a portion of the work in a large garden, the heaviest part of the housework for a family of four; also pick and can our fruit.

I have enjoyed the years that I have spent on the farm the best of any portion of my existence. And I find that woman's work on a farm is not as fatiguing as many kinds of work done by women. The editor, doctor, lawyer, merchant, and priest work hours that farmers know not of while resting from their daily toil. The clerk at the counter, the laborer in the factory, the worker in the shop, all have their fatiguing employment; in fact, all occupations are fatiguing. I think mental work is more tiresome to the system than muscular labor.

The farmer and his family have many healthy, invigorating advantages. They have the pure, fresh air, healthy food, bright scenery of the year round, which builds up the system for each day's work. I have tried doing many kinds of work, both muscular and mental, and I find none as healthy as farming.

I will say to the farmers' boys and girls, remain on the farm until you know how to do farmers' work well and profitably; then, if you have a better taste for other employment than farming, turn your faculties to that taste if you choose, but be sure of your likes and dislikes before leaving the farm. My estimation of farming is the highest calling of all employments, and if not the highest, it is in fact the most essential calling to the existence of man; for without the farmer where would the rest of mankind be? The world can't live without us. —EMMA L. HILL, Windsor, N. Y.

A Letter with the Right Ring in It.

From our special correspondent, Hon. John H. Wadsworth, Secretary Connecticut Sheep-Breeders' Association.

I see neither justice nor reason in "free wool" and 40 per cent. protection on manufactures of wool. Free raw material is an "iridescent dream." To produce the wool that the College Professor calls free, I am paying cash for Illinois corn and South Carolina seed. With the temperature at 10 to 20 degrees below zero, I have to watch the advent of future wool producers day and night. I want this tariff matter settled. Wool doesn't seem to have any Democratic friends in Congress except Senator Bruce, of Ohio; but any party that ignores the existence of 1,300,000 sheep farmers in its economic policy, is liable to be granted a vacation.

The Government stud of Chamant, in France, has tried with success the curative properties of the male goats, or "bous," for horses' diseases. There are in that stud five or six bucks who gambol among the horses and get all the maladies which might fall upon the latter. Tristan, one of the best stallions, lives with his buck in the paddock, and some colts having had their noses and eyes affected by a disease, one buck was placed with them and the colts were cured, but the buck was extremely sick after a few days, and could hardly move.

Bank Clerk—This check, madame, isn't filled in.
Madame—Isn't what?
Bank Clerk—It has your husband's name signed to it, but does not state how much money you want.
Madame—Oh, is that all? Well, I'll take all there is.

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\$1.00 ACME FISHERMAN OUTFIT. \$1.00

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11. Fishing Undershirt.
12. Fishing Undershorts.
13. Fishing Suspenders.
14. Fishing Belt.
15. Fishing Knife.
16. Fishing Hatchet.
17. Fishing Axe.
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75th Year. New Series.—No. 61.

SILOS AND ENSILAGE.

Way to Build Silos and to Fill Them.

The partial failure of the corn crop over a large stretch of country and the widespread damage to pastures have developed an active interest in ensilage. In response to many requests we reproduce the main portion of an article on "Silos and Ensilage," which appeared in THE AMERICAN FARMER last January, and received unusual praise.

Every well-conducted farm should have a silo, and every man who feeds stock should have at least one ensilage to add to and vary the rations, if no more.

A silo is merely an air and water-tight box in which green, succulent forage is preserved.

In the United States corn is most generally used for silage. But many varieties of sorghum are also used, and pearl millet, alfalfa, soja bean, clover, cowpeas, rye, etc. In Minnesota Southern Ensilage corn is found to produce twice as much fodder as the Minnesota Dent, Leaming's Sibley's Pride of the North, etc., but the medium-sized Dent corn has a higher nutritive value, and much labor was saved in handling it. The Dent varieties yielded more fodder and dry matter than either the flint or sweet varieties. In Wisconsin the

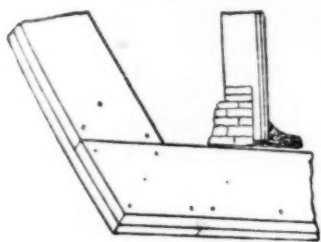


FIG. 1.

Southern Horse Tooth gave most green fodder, protein, and sugar. In Vermont, Wisconsin Yellow and Pride of the North gave best results. The yield of sorghum is generally greater than that of corn, and it remains green longer in the field, thus protracting the time of filling the silo. The Wisconsin Station got very good results from clover silage, and found it richer in protein than corn. The question of mixing depends, we believe, on the maturity of the different kinds of forage silage. Those that are in the same condition of maturity can be safely mixed in the silo.

Though some do not cut the silage, the general opinion is that it is much better to do so. The finer it is cut the closer will it pack and the better will it preserve. Many prefer it as small as half-inch lengths. The labor of cutting and filling is the hard work of ensilage. The corn can be cut by hand or power. A hand cutter can be bought for from 25 to 40 cents, or one can be made out of an old hoe or a piece of a broken scythe.

THE MANNER OF PRESERVATION is not yet thoroughly understood, and to explain what is known of it requires a long explanation of the principles of fermentation. As a partial and makeshift explanation, we will instance the fermentation of starch, which by different stages of fermentation changes first to sugar, then to alcohol, next to acetic acid, and then to putrefaction. The silage goes through one stage of fermentation, in which yeasts and bacteria play complex parts. After heating, the silage settles, the air is excluded, and further fermentation is largely prevented.

There is an infinite number of ways of building silos. The first, built in France and England, were of brick and stone, and this practice was at first followed in this country. Now, almost everywhere, wood is preferred.

THE BEST FORM IS CIRCULAR, as it gives more contents to the same amount of wall; and, still more important, it has no corners, where the ensilage is imperfectly packed and rendered liable to spoil. The location should be as near the barn or feeding place as possible, as ensilage is heavy stuff to handle. The size depends upon the number of animals to be fed and the number of days that they are to depend on silage. For a cow from 30 to 45 pounds, or 1½ bushels a day, is usually estimated, with one-half this for a horse, and one-third for a sheep. Average 40 pounds a day for a cow for 150 days in a year would make 6,000 pounds, or three tons. Silage ranges in weight from 25 to 50 pounds per cubic foot, depending upon the greenness of the corn and the depth of the silo. The average has been estimated at 30 pounds. This would require for each cow a mass 8 feet long by 5 feet deep and 5 feet broad. From this it will be easy to calculate how big the silo should be.

Bulletin No. 89 of the North Carolina Experiment Station gives the following excellent directions for building a two-

room silo to hold from 72 to 120 tons of silage, enough for 20 cows, or their equivalent of other farm animals, for 150 days.

THE FOUNDATION.

If the location is dry the foundation may be a trench one foot square, filled with small stones, on which stones or brick are laid in mortar 6 inches to 10 days.

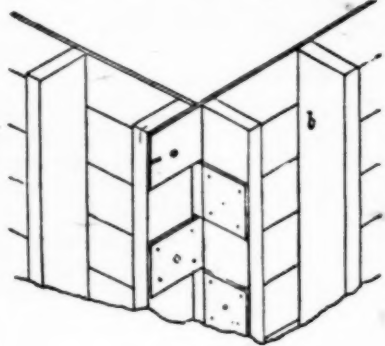


FIG. 2.

1 foot high and 10 inches thick. It should be 23 feet 2 inches by 15 feet 10 inches wide over all. The loose soil should then be thrown out and trampled around the outside to shed surface water, and place filled with tamped stones covered with clay. The silos, 2 x 10 inches, should be laid on the wall while fresh, and a few long spikes driven into the wall will help hold them in place.

A second 2 x 10 should be laid on the first and spiked down, observing to cross the corners, as shown in Fig. 1. This will securely tie the corners. The four planks for side silos should be just 22½ feet long, and the four for ends 15 feet. The partition sill should be 2 x 6 and the first piece should be 13 feet 6 inches long, and the top one may reach across the side silos and be spiked to them for a tie across, or this partition sill may be but a single piece, put on at the level of the top of the side silos, and have spikes driven into the foundation wall and side silos to stay it.

STUDDING AND BOARDING UP INSIDE.

Stand the center of the 2 x 10 by 20 feet, studding on the silos 14 inches from the corner at each of the four corners; stay these, and at one corner begin boarding up the inside with boards one inch thick and of uniform width, so they can readily be alternated at the corners, as shown by Fig. 2. As the boarding proceeds so the other studs can be readily held in place, set the end studs 18 inches apart from center to center, and the side studs 17 inches apart, measuring from the center of the end stud toward the middle of the silo. Each end will contain 10 studs, and the partition will contain the same; but the end ones in the partition must be set back from the wall two or three inches. The back side will contain 15, and the middle one will be set so one of its sides will line with one edge of the partition studding. The seventh

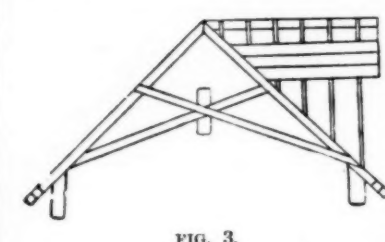


FIG. 3.

stud from each side in front will be moved toward the middle to line with the partition boarding, so they will stand but two inches apart, to leave a good doorway into each room. On the ends, boards (or plank) 15 feet long should be used, so there will be no splicing. This would also be a good length for the sides. The middle studs in front and the one in the back wall standing in the partition line allows tying the silo across very firmly by the first or horizontal boarding, the partition boards alternating with the back side (see Fig. 2), while in front the whole length of the doors can be used for cross-tying; but care must be taken that the long boards between vertically arranged doors are not interfered with, as these tie the building endwise.

THE ROOF.

Having now provided for the rough inside boarding, the roof is the next part to build. Make it a square pitch and use 2 x 5 by 13 feet rafters, which will give projection enough to the roof. Tie these with 1 x 5 by 13 feet pieces, as shown in Fig. 3. It will require 15 pairs of rafters and collars, or ties, of which on one side the middle ones will be cut out to give place to the upper doors to be used in filling the silo. Cover with cheap lumber, and slingle.

THE GABLES.

may be boarded up with the same cheap material as that put on the roof, or if the outside is covered with good material, it should be carried on up the gables. One six-light sash should be put in each gable for light in the silo, but it is not essential, and is not included in the bill of material.

FINISHING THE INSIDE.

The silo is now 20 feet deep, including the silos and walls. The vertical matching and surface boarding should be long enough to reach from the bottom of the wall to the top of the studs, and as carefully matched as a floor. This inside lining must be of good material. Before nailing in there should be some air-tight material, as tarred building paper, hung in strips from the top to the bottom, to lap two or three inches, and the boards then but on. At this point attention should be given to the corners. It will probably be economy to cut pieces across the corners two or three feet long, chamfer the edges so they will fit well, hang the paper and lay on the vertical siding. Something of an idea of the work on the inside may be gathered from Fig. 4, which shows: a, a bit of the foundation; b, silos; c, rough boarding; d, tarred building paper; e, vertical matched boarding; f, corner pieces, cutting off the corner; g and h, the tops of the studding.

THE DOORWAYS.

After the rough boards of the partition are put on the doorways will be 35 inches wide in the clear, if the partition boards are lapped out past the middle studs and cut off at the center of the studs on the opposite side. Nail in se-

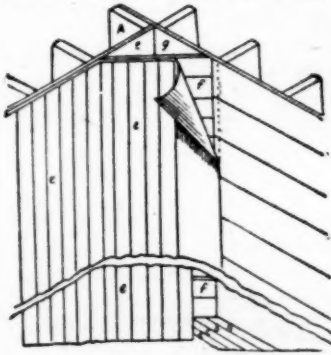


FIG. 4.

curely a one-inch piece as wide as the studs and as long as the door is high on each side. These will protect the studs and support the pieces put across the doorway to retain the silage. In putting up the vertical boards leave one inch from the ends of the horizontal boards to break joints, and finish at two inches from the stud on the partition. These doorways should be of uniform height, six feet, and four in number, two in each division. They will be 33 inches wide when completed. The pieces to fill up this space should be cut just three feet long for the first set, to match the horizontal boarding, and three feet one inch to fill between the vertical boards and partition, and when put up should be separated by tar paper. When the outside is finished, swing doors may be put on the outside, if desired, for finish. In boarding outside use 2 x 4 or 3 x 3 studding on the corners to nail to. For convenience in filling the silo a door should be put above the partition over these doors, or on the opposite side, and a dormer roof raised over it as shown in Fig. 3.

BOTTOM OF THE SILO.

If the silo is on dry ground, it will not be necessary to more than pack in four or five inches of small stones and cover with puddled clay. If in a wet place, one or two drains should be made from it, and gravel and cement be put on the stones and the walls plastered up with cement.

COATING THE INSIDE.

Various mixtures, as well as clear coal tar or linseed oil, are recommended and used with varying success. The silo at the New York State Experiment Station at Geneva, N. Y., was built in the Fall of 1888, too late to be used that season. The inside boarding was of soft pine. A short time before using, in 1889, this

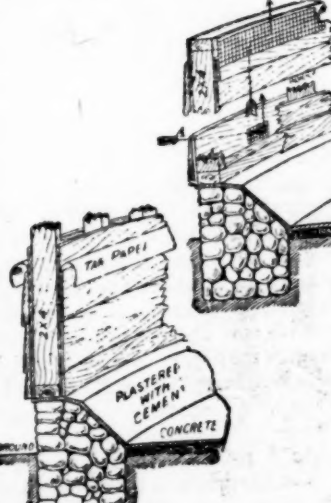


FIG. 5.

silo was coated with paraffine and resin, to which was added enough of boiled linseed oil to prevent cooling too quickly on the brushes in the application. This made a glossy finish, resembling varnish,

with considerable body to it. It hardened in a very short time after being put on, and seems to remain impervious to the action of the silage after two years' use. After removal of the first silage put in, some of which was in the silo nine months, this coating appeared as glossy as when first put on, except in places where silage had stuck; but on rubbing these places it was found to leave the

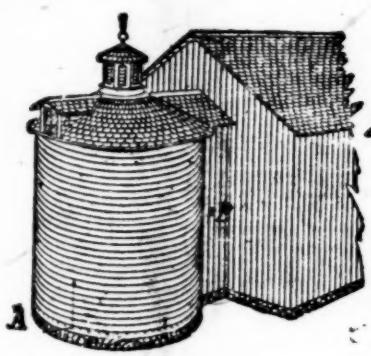


FIG. 6.

surface bright. The bottom of this silo is a little below the level of the basement floor, and that part, as well as two of the walls to the level of the barn silos, are against stone walls and are plastered with cement, to which the mason gave an extra hard, smooth finish. After nearly emptying this silo the second time, the Director of the Station, Dr. Peter Collier, writes: "So far as the cement walls are exposed they show no noticeable disintegration or decay. The wooden walls are only slightly discolored in patches where the silage adhered. The wood does not seem to have suffered any decay. Some of the boards were examined with a knife, and none of them showed signs of decay." The mixture of ingredients for this coat was 7½ pounds of paraffine to 10 pounds resin, to which was added about one quart of oil. This amount, spread with a brush, should cover 400 to 450 square feet. A gentleman living in the neighborhood built a silo and coated it with coal tar, he writes about it as follows: "I put on coal tar boiled with some asphaltum (a gum) dissolved in it to harden it; applied it hot, but it cooled so quickly it was a disagreeable job and

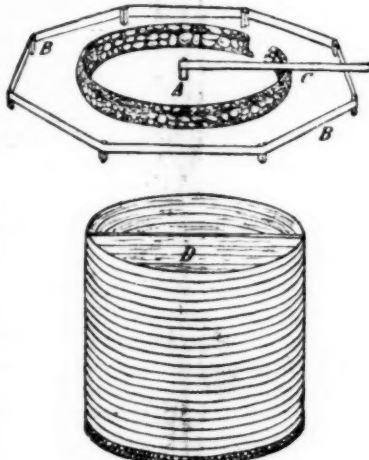


FIG. 7.

left a blotched-looking surface, but I think it answers a good purpose in the matter of keeping the sides dry. I have been told since I did it that a better way is to thin the tar with gasoline, so it could be applied with a paint brush."

Bill of Material for Silo, two rooms, each 10x13½ feet inside, 20 feet deep.

	Feet.	Price per M.	Value.
For silos—			
4 pieces 2x10 in. by 15 feet.	100	\$6 00	\$6 00
4 pieces 2x10 in. by 23 feet.	150	6 00	9 00
2 pieces 2x10 in. by 15 feet.	30	6 00	1 80
For studs—			
40 pieces 2x10 in. by 20 feet.	1,600	6 00	96 00
10 pieces 2x10 in. by 20 feet.	200	6 00	12 00
For outside corner studs, 4 pieces, 2x10 in. by 20 feet.	2,000	6 00	120 00
Inside rough, 165 pieces, 1x10 in. by 15 feet.	2,475	6 00	148 50
Rafter ties, 30 pieces, 1x10 in. by 15 feet.	330	6 00	198 00
Roof, common rough 1-inch lumber.	700	5 00	35 00
6,000 shingles.	150	9 00	135 00
Pine flooring, 30 feet long surfaced and matched.	2,300	15 00	345 00
	7,600		
Carpenter labor at \$3 per 1,000 and board.			\$22 80
Hardware—400 nails, 10 lbs. at 2½ cents.			10 00
200 nails, 10 lbs. at 2½ cents.			5 00
100 nails, 10 lbs. at 2½ cents.			2 50
50 nails, 10 lbs. at 2½ cents.			1 25
40 nails, 10 lbs. at 2½ cents.			1 00
200 barrels lime, at \$12.50.			25 00
One barrel Rosendale cement, at \$2.			2 00
1,000 bricks, at \$5 per 1,000.			5 00
Mason laying brick.			5 00
Total cost.			\$136 15
At the old rate of estimating 50 pounds per cubic foot this silo would hold 120 tons, and cost per ton—			\$1 15
At 40 pounds per cubic foot this silo would hold 96 tons, and cost per ton—			1 31
At 30 pounds per cubic foot this silo would hold 72 tons, and cost per ton—			1 75

THE FOLLOWING OUTS AND DESCRIPTIONS are from Bulletin 28, Wisconsin Experiment Station: They show very plainly the construction of a round silo.

Fig. 5 shows the construction of all-wood round silo. Silos, 2 x 4s, cut in sections on a radius of the silo circle, bedded in mortar and toe-nailed together; plates the same, spiked to tops of studding; studding, 2 x 4s, one foot apart; short length may be used lapped to get the depth. Sixteens and fourteens will give a silo 30 feet deep; lining made

from fencing ripped in two; outside sheathing the same; siding for silos under 28 feet, outside diameter, common siding rabbeted; for silos more than 28 feet outside diameter common drop siding or ship-lap may be used. A, shows ventilator between studding; auger holes are bored at bottom between studding, and the boards lack two inches of reaching plate at top inside. Both sets of open-

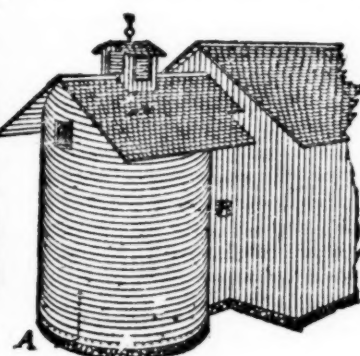


FIG. 6.

ings are covered with wire cloth to keep out vermin. There should be a line of feeding doors from top to bottom, each two or three feet by five feet, and about 2½ feet apart.

Fig. 6 shows two methods of roofing round silos and the manner of connecting them with a barn. A, A, shows where air is admitted between the studding to ventilate behind the lining; B, B, the feeding chute; C, C, filling window. The cupola is essential for perfect ventilation.

Fig. 7 shows method of laying and leveling foundation of a round silo, and a round silo with a single partition. A, center post with top level with top of proposed wall; B, B, straight-edge boards nailed to stakes driven in ground; C, straight edge fixed to turn on a pin at A; B, B, are all nailed level with top of post A; D partition in round silo. It may be placed so as to come in the middle of the single line of doors, letting the same doors answer for both sides.

Fig. 8 shows the construction and ventilation of the walls of a rectangular silo. The silos are two inches narrower than the studding to leave air space between the silos and lining. A, is two inches of mortar made by stirring sand into coal tar boiled until it is hard when cold. B, is bolt anchoring sill to wall, placed about four feet apart. C, ventilator between studding.

Round Silo, 180 tons—20 feet inside diameter, 30 feet deep.	
Foundation, 7½ perches, \$1.20.	\$9 00
Studs, 2x10 inches by 14 and 16 feet, 1,600 feet, at \$6.	96 00
Rafters, 2x10 inches by 12 feet, 200 feet, at \$6.	12 00
Roof boards, 50 feet, at \$5.	250 00
Shingles, 6,000, at \$1.50.	9 00
Siding, rabbeted, 2,000 feet, at \$14.	28 00
Lining, fencing, 10 feet, 2,000 feet, at \$10.	20 00
Tarred paper, 40 pounds, at 3 cents.	12 00
Coal tar, one barrel (in Raleigh) 5.00	5 00
Hardware.	13 20
Painting, at 40 cents per square.	13 20
Cementing bottom.	6 00
Carpenter labor, at \$3 per 1,000 and board.	33 17
	\$180 31

WHEN TO CUT.

It has now been pretty well settled that corn should be silaged stalks and ears together, and not be cut before it has reached the milk stage in the kernel. The Ohio Experiment Station directs

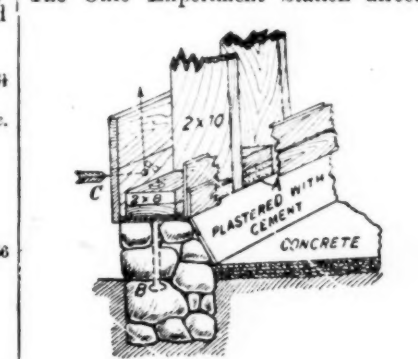


FIG. 8.

that it should be cut when it begins to glaze, and the stalks begin to dry near the ground.—EDITOR AMERICAN FARMER.

Crimson Clover.

Prof. Voorhees, of the New Jersey Experiment Station, in Bulletin No. 100, gives the results of a test of crimson clover in the state grounds. He sums up the results in this way:

"1. That it will grow in any part of New Jersey, and that it is quite as hardy as the common red variety.

"2. That when seeded between July 15 and Sept. 15 it will mature from three to four weeks earlier than red clover.

"3. That since it is an annual plant, and differs from other clovers in its time of growth and development, it cannot be regarded as a substitute for them.

"4. That the quality of the fodder and hay is superior to that of red clover."

Agricultural chemists are revising their opinion about the necessity of lime as a fertilizer. It unquestionably has a much higher value than they have so far been willing to assign to it.

THE HIRED MAN

In the Past and the Present.

BY PROF. HENRY W. ELLIOTT, CLEVELAND, O.

There is, perhaps, no sense in attempting to give suggestions or advice to anybody who on the farm is obliged to hire his help in the fields and in the house. The particular temperament and the financial situation of that man will have so much to do with the right understanding and management of the question that the discussion of the subject on paper will really have little practical bearing outside of a few broad generalizations. But there are several points bearing on this matter which I propose to elaborate out of my own full experience, and possibly this elaboration may smooth the path of some who now find the way rugged and wearisome.

There has been in the Northern States of this Union, since 1850, a subtle change in the whole character and system of farm labor as relates to hired help. Forty years ago the hired man on your farm was usually a native American, born and bred; so with the girl in your kitchen. He came in almost as a member of your family; he was fairly well educated in the country and town schools; he was a sociable and a serviceable companion of yours when in the fields, and sat at the same table with you and your wife and children for his daily meals; went to church with them Sundays, and accompanied them to the various dinners and quilting bees that good old times record as common in the early days of the settlement of this country.

This man worked with a deep personal pride in the success of everything undertaken during the year on your farm. He required no watching or reiterated directions, and never regarded you with envy or any meanness on his part, while on yours you never looked down upon him as a menial or a mere hireling. This mutual regard and respect bore good fruit, and the labor problem



NO CAUSE TO COMPLAIN.

of our fathers and grandfathers was never one that galled and pinched them, as it galls and pinches us to-day. Why? Because, opening up the vast tract of rich lands in the West by that extraordinary system of railroad building and operating now in full force carried these native Americans, who were the type of what I have just defined above, away to cheap farms of their own, and at the same time carried from our seaports into the innermost townships and hamlets of our broad land the foreigner, who, coming, as a rule, penniless from the old world, eagerly sought service under our established farmers.

THE FIRST RUN

of this immigration to our country was not so bad. The Irish usually remained in the towns and cities, the Germans went out into the country; the former generally working in gregarious bodies in the service of railway corporations, while the latter separated and scattered as individual hired men on the farms. Both gave general satisfaction in those days; especially the Germans. Gradually these pioneer German servants drifted out onto their own land, in turn, and the best of their countrymen who continued to come over went directly to them rather than to us; naturally so, because, speaking the same language, and bound by local ties, the German-American farmer was easily able to take his pick of the fresh help as it arrived at Castle Garden. So it has been with the Swedes and the Danes, until now we have found ourselves generally face to face with an entirely different run of farm labor. In this section where I live we have Bohemians, Hungarians, Poles, and Swiss, and I am free to say that they make a poor substitute for the German, the Swede, or the Dane, and they cannot be treated with the same freedom and confidence that we gave the early German laborer. They do not seem to understand it, and certainly they do not appreciate it.

With this class of farm help the best plan for the American farmer to pursue is to reassert precisely the same relation with the Bohemian, the Hun, the Pole, or kindred races, which the employer bears to the employee in Europe, and it takes the following form:

UNDER NO CIRCUMSTANCES

have any conversation with the hired man except on the subject of his daily labor on the farm; never allude to anything else; never seat the man at the family table; always give him his meals apart, and in another room rather than the dining-room; if that room cannot



A PERPLEXING QUESTION TO FATHER.

be spared, then never call him in to eat until your folks have finished; never permit him to be out or off the place late at night, and rigidly enforce a regular hour for rising in the morning.

If these rules are faithfully carried out you will have a fairly good man at your call; one who can and will work hard, but never intelligently, somehow or other. Why there should be this remarkable difference in the make-up of the brain of the average German and that of the average Bohemian, Hun, or Pole, I am unable to explain; but the difference does exist. The Irish and Italians work so little on our farms as a class that I am unable to generalize over them in this respect. While I place the Swede and Dane higher, if anything, in this respect than the German, still, comparatively speaking, there are so few of these excellent people scattered over our country as employees, that it is hardly worth while to take them into consideration.

THE BEST FOREIGNER

that the American farmer can hire nowadays is a young man who comes to him entirely ignorant—who has no idea of doing anything on the place except as he is shown how to do it. If he is the right man for that farmer, he will require but one showing for each and every service that he is required to render, and thorough in giving his lessons. As I have said, use as few words as possible; do what you want him to do entirely with your own hands once and see that the man catches on to every detail of that particular chore; then watch him do it once right after you, and you will soon know whether you have the making of a good hired man in the fellow, or not.

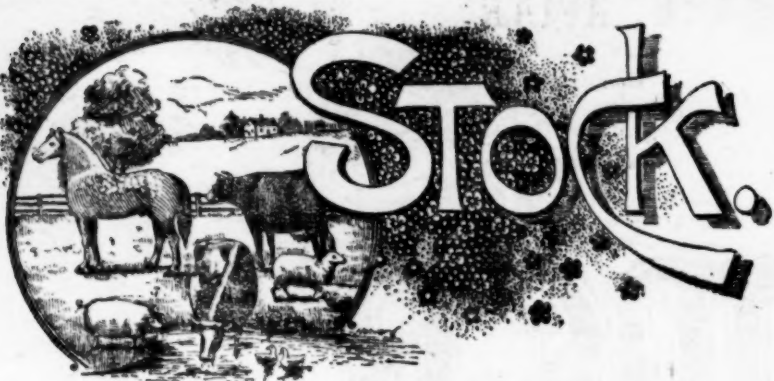
Then, again, give the foreigner his own particular room to sleep in, and let him attend to that room himself; don't send the hired girl or any of your



MOTHER'S APPEAL FOR HELP.

own women folks to make up the bed or sweep. Furnish the man with the simplest necessary bed chamber articles and inform him that he must wait on himself, morning, noon, and night, in that chamber; instruct him how to bring his wash in once a week to the house washing, and then let him shift absolutely for himself. This proceeding on your part will please that man nine times out of ten far more than if you

(Continued on fifth page.)



Yard Echoes.

It is said that the number of mares bred in the United States in 1894 is 500,000 less than the previous year.

The horse is undoubtedly less abused than formerly; but there are yet too many drivers whose connection with civilization is a misfit.

A horse that is addicted to rolling and getting cast should wear a halter with a ring fastened to the top between the ears. Snap a rope or strap in this so he cannot lay his head down flat, and thus tired there will be no further trouble.

Swine Raising in the South.

EDITOR AMERICAN FARMER: Health and cleanliness are essential to success. It is a fact that should be known by every person engaged in raising swine, (either for home consumption or market) that the health of the herd is the most important factor. We may take the best breed of hogs to be had, and not keep them healthy by proper management and they will dwindle and deteriorate in constitution, and finally succumb to disease. Such hogs are unfit for food, even if they have been gotten in good condition before they are killed. On the other hand, we may take a very inferior breed, and by paying strict attention to cleanliness, both in regard to their feed and their bedding quarters, they can be improved to such an extent that they will surpass a much better breed that is not kept under good treatment.

PREVENTION IS BETTER THAN CURE and is certainly the only true mode to pursue in order to prevent all risk of loss. For we cannot wait till our hogs have been attacked by disease and then expect to cure them without loss. Even if we prevent them from dying, the hogs are certainly injured far more than would be supposed by most people. After a hog has once been diseased it is impossible to make it thrive with the best of treatment. It is not to be compared with one that has been kept healthy, in any particular. A good, healthy hog should be the pride of every farmer. We have as good, or better, facilities for raising fine, healthy hogs here as there is in the great swine raising districts of the West. All we lack is giving them the attention. Some think that because a hog will eat it, and squeal for more, that anything is good enough, and nothing too foul for it. Right there is where they make one of their greatest mistakes. A hog should, in order to keep healthy and thrive, have just as wholesome food, just as clean water, and just as good sleeping quarters as any other animal on the farm.

Nuts, roots, herbs and worms are the natural food of the hog, and should be supplied by every means—in part if not all of the variety. If we have not a range that is capable of furnishing these things, we can supply them with an equivalent, such as hay, green fodder, sorghum, turnips and other roots; oats, corn, wheat; and by planting a piece of ground to chufas or artichokes, especially for the hogs in the Fall, we can give them a variety of feed which is just as essential to the hog as a variety of food is for man.

FILTH IS A PROMOTER OF LICE, as much as of disease, and lice is just as great a pest, and more so in some instances, than disease. It is a very simple matter to keep hogs free from lice, though any kind of grease will not exterminate them, as many suppose. A great many people think that wallowing in the mud and filth is essential to its health, but, to the contrary, it promotes malaria as readily in hogs as it would in man. Lice causes the hog to be continually rubbing and wallowing in the dirt and mire. There are various remedies to clear hogs of lice, most of which are known to most swine raisers, and it is very important that they make use of some of them. By keeping our hogs free from lice, and in a healthy, vigorous condition, should contagious diseases appear in the neighborhood they will be the last attacked and the least hurt.—JOHN W. DELK, Denmark, Miss.

Feeding Pigs.

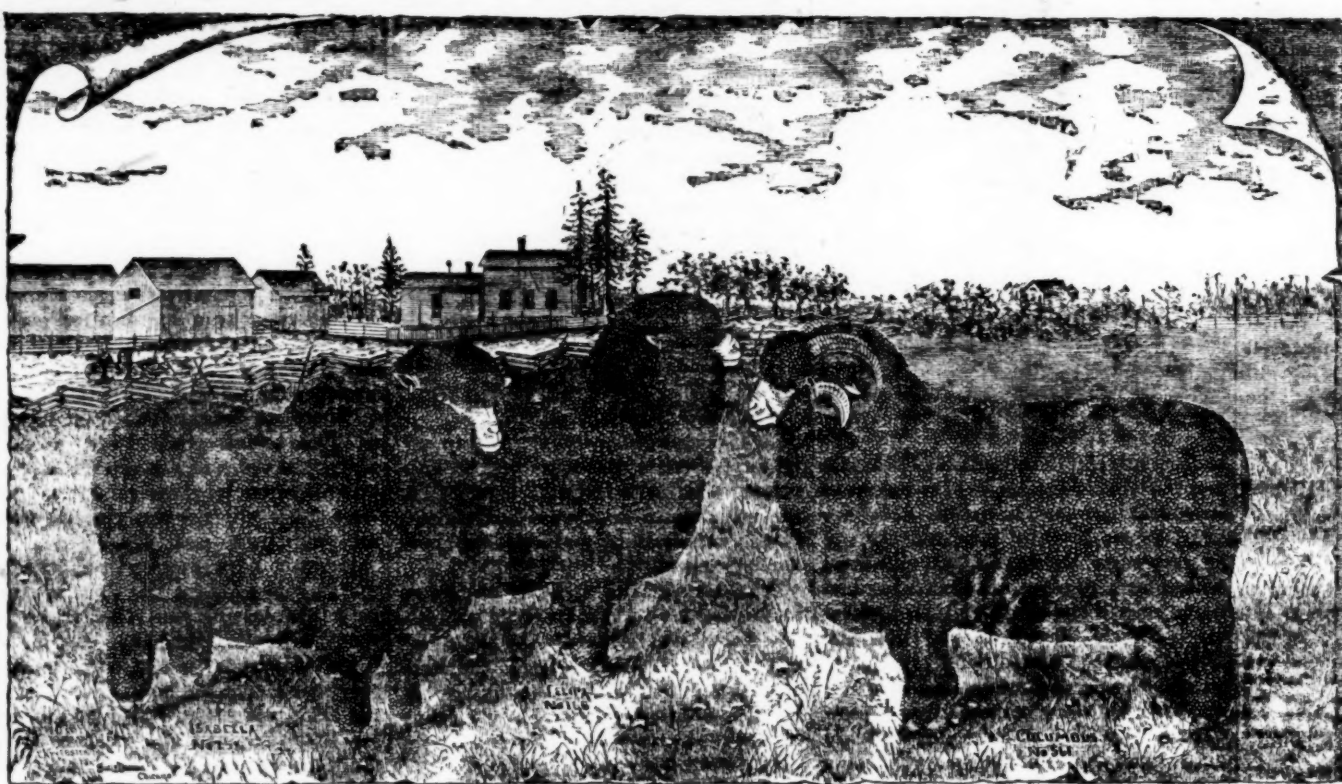
Pigs are selling at 5 to 8½ cents a pound, live weight. At such prices pigs are "equal to gold," as the saying goes. There is no other farm product so profitable. And the pigs that are most cheaply reared are the most valuable. Light to medium pigs bring the top price, but they make more growth for the same quantity of feed at their age than they will ever do afterward. The advantage of this is certainly equivalent to at least 25 per cent. additional in the price. At these prices there is more money in this business at the present time than in any other part of agriculture. If only the pigs are bred and fed under the best methods they may be brought to the right age and weight, which is eight months and 200 or 180 pounds, at a cost of not exceeding 2 cents a pound. They should go with the dairy or be reared within easy reach of a creamery or cheese factory, where the milk or whey can be procured at very little cost. This, with pasture of various kinds, as clover, rye, peas, oats, rape, which costs but little, and buckwheat, wheat, and corn, for the finishing, will bring the pigs to the markets at the cost named. Under the common ineffective methods the cost of pork is fully double this amount mentioned.

The Best Barrow.

N. H. Gentry, Sedalia, Mo., offers a prize of \$100 for the best Berkshire barrow farrowed in 1894, and weighing not less than 300 pounds. Full particulars can be had from Col. Chas. F. Mills, Springfield, Ill., Secretary of the American Berkshire Association.

Feeding Wheat.

The high price of corn and the low price of wheat turns everybody's attention to the use of the latter for forage. With the proper condition it is as superior food for animals as for human beings. As it contains an evenly-balanced ratio of nutritious matter for healthful feeding, it will be better than corn for the making of the pork crop, and as a bushel of it is worth 12 per cent. more than a bushel of corn, its use at the same price as corn will be profitable. For feeding horses it is an inferior food, on account of the small quantity of coarse, or waste, substance in it. It is too highly nutritious, in fact, and needs some coarse stuff fed with it to render it fully digestible.



THE COLUMBIA GROUP OF WORLD'S FAIR PRIZE WINNERS; ALSO AWARDED DIPLOMA ON WOOL EXHIBIT.

Property of Alvin Crittenden, New London, O.

Fed alone, it is apt to pack in the horse's stomach and produce indigestion, just as the heavy, sticky, glutinous, badly-made bread is for the human stomach. Thus wheat should be coarsely chopped for horses and fed with cut hay, with one-fifth as much fine grain or meal as of wheat. Or it may be fed with the lightest oats to be procured, the excessive chaff of which will render the wheat digestible. For feeding pigs it will be fed whole, or coarsely ground and given in the form of slop, with milk if possible. It makes, thus fed, the finest quality of meat.

A Great Sale of Merino Sheep. By the passing away of Mr. L. E. Shattuck, the greatest modern improver of Merino sheep in America, whose record in show-yards and at shearing festivals has attracted so much attention and placed him upon the highest rolls of honor, the sale of the entire flock is announced at auction in October next.

These most fashionable sheep, the largest and heaviest shearing Merinos, the creation and pride of "Clear Spring Stock Farm," won more prizes and more money than any Merino flock in America for ten years in succession at State, District and World's Fairs; won five prizes on the small wrinkly kind over Vermonters; on Delaines 14 prizes; 15 prizes, 3 sweepstakes out of six, or one-half of the whole over the whole world in all, more than was won by all men of any other three States.

It is not understood that the selling at auction is to be a dispersion sale, though such is possible since it is a bona fide sale to settle up the estate. It is hoped that the Shattuck flock may be retained in the family and the course of the great modern improver of Merino sheep continued indefinitely for the general good of the industry.

How to Cull a Flock.

There are two ends to every flock—a head and tail. It is best to begin drawing out the poor sheep first. For a while the work is easy enough, and the improved appearance is soon apparent. When the bad ones are out of the way the job is more than half done and the "tops" are more easily seen. Almost any boy can do the work up to this point; but an expert only can select the best sheep from a bunch of really good sheep. It requires time, judgment and careful comparison to do good work.

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Pen Notes.

The digestion of pigs is strengthened by feeding them some corn all the time when they have clover and grass, with which to keep their digestive organs in good working order.

Dry corn is a very poor feed for sucking sows. It is better to soak the corn and feed it with oats and bran in a trough; the more oats the better for both sows and pigs.

SHEEP AND WOOL.

Shearings.

The drouth, locusts, and heavy, cold rains have caused a loss of 500,000 sheep to flockmen of South Africa.

New York City is to have a mammoth wool warehouse 10 stories high to the intent to centralize the wool trade of the country.

Free wool and London prices, Mr. Justice declares would utterly exterminate the wool industry of the Rocky Mountain region.

To save the market from going to pieces at the late London auction sale of wool it was necessary to withdraw 30,000,000 pounds.

An exchange believes in wheat bran as a stock food; not the heaviest bran, but the lighter. "It should not weigh more than 18 or 20 pounds to the bushel."

Every stomachful of grass the sheep takes must be seasoned with salt. To do this put the salt in both yards and pastures, where the sheep can take all they want.

An old sheepman used to say: "If you want your lambs to jump up as soon as they are born, feed the ewes a few

The Suffolk Sheep.

The Suffolk sheep were spoken of in the early years of this century. They came from a cross of the Horned Norfolk ewe with the Southdown ram.

The Norfolk sheep are described by Arthur Young in his "General View of Agriculture of the County of Suffolk," published in 1797, as having mutton "for the table of the curious, superior in texture or grain, flavor, quality and color of gravy, with fat enough for such tables. The wool is fine, and in price is third sort in England. They are active, bearing well hard driving, and are much liked for nurses."

Could it be possible to suppose a more useful ewe with which to cross the Southdown ram? Would it not be surprising if such ewes were so bred for 100 years without producing a valuable breed of sheep?

The nervous, uneasy Norfolk, though possessing a choice mutton, were converted into a better fattening animal, equally hardy and more suited to the wants of the hill farmers of England. This family of Downs, if so they may be called, like the others with similar origin, had to wait a long time for recognition. It was in 1859 that the Suffolk Agricultural Association's meeting consented to give the Southdown-Norfolk sheep a separate place in the show ring, and from that time they were called Suffolks.

The American Suffolk Flock Registry Association was established early in the year 1893 under the laws of the State of Iowa. This latest candidate for favors has won its way to popularity and seems likely to keep this place.

A Word of Caution to Importers of Sheep.

W. W. Chapman, President of the English Southdown Club, says among other good things about importing sheep: "I would earnestly press upon all who are thinking of selecting sheep from English stud flocks, to buy only those sheep whose pedigrees are duly and properly recorded in their respective flock book association."

He further insists that such animals should have in their ears or elsewhere on their bodies the society's registered trademark tattooed in the flesh, together with their breeder's registered number in the record, thus having a permanent and certain means of identification which cannot be removed or erased; and the total prohibition of importation of all non-registered animals for breeding purposes.

Standard Delaine Merino Sheep.

The object of the Standard Delaine Merino Association is to improve the Merino sheep that it may better meet the wants of the wool and mutton producer. One advantage the Standard Delaine Association have is that they reject all culls. Every sheep is required to scale 75 points. Another great advantage this Association has over others is that they can go outside of their register to get stock rams; as any pure Merino blood descendant of the blood line registers is recognized where it has individual merits that will scale in accordance with the rules. That is where the bottom has fallen out of a number of otherwise good registers; they cannot go outside of their own association for stock rams, and they follow the same line of breeding year after year until they find, alas, too late, their mistake. They breed in and in until they lose sight of the ideal sheep they once possessed.

Our object is to get all the size of carcass possible, and in the fleece as much length and density as possible, and to avoid wrinkles and gum. I have a flock

of 300 standard Delaine sheep that I can care for and breeding just as carefully as though the leaders of the party in power were not trying to drive them clear into the woods and out of sight. This country has always had use for mutton and wool. We have some grand mutton breeds, also some breeds that are especially valuable for their wool. But in our Standard Delaine sheep we claim, and justly so, to combine these two important points, wool and mutton, to a standard of excellence which is not excelled by any other breed on earth, as far as our knowledge extends.—ALVIN CRITTENDEN, New London, O.

Dogs vs. Sheep in Virginia.

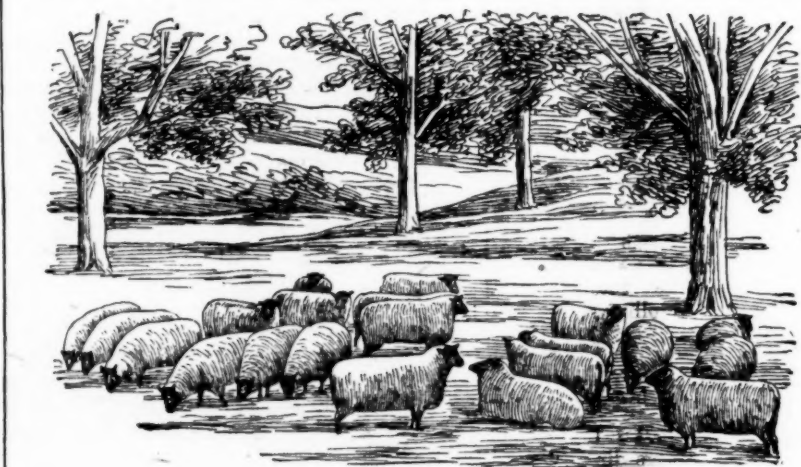
With the evidences of reviving interest in sheep raising in the "Old Dominion" it is gratifying to find such papers as the Fredericksburg Star taking sides and discussing the question of dogs vs. sheep as follows:

"The large slaughter of sheep by dogs has a very serious influence against the sheep industry, which, but for this obstacle, could be made a source of considerable revenue to the farmers. In most cases the dogs that prey upon sheep are worthless, for it is a rare case to find a valuable dog that is a sheep killer. How to remedy the evil, which appears to threaten the total abandonment of sheep raising in many sections, is a problem that has been discussed and which called forth various suggestions, but few of them, however, have been subjected to a practical test. * * *

"It is well to discuss a question of such importance to the farmers, and look at it from every conceivable standpoint, but it is not wise to wait until a perfect remedy can be secured before attempting to cure the disease. A relief-giving remedy is better than no remedy at all, and may in time lead to the discovery of a perfect cure.

"Steps should be taken in every County to foster the sheep industry and protect those engaged in it from heavy loss occasioned by devouring canines."

The Washington Post, too, takes a hand in this discussion and shows just where the work must begin and the sort of a dog that must be abated. It says: "The question in Virginia seems to be pretty clearly defined. It is a question between the wool-bearing sheep and the con-hunting yellow dog. The sheep is a source of wealth. It bears wool which is salable, and cuts up into meat which is both nutritious and remunerative. The owner of land which is too poor to be cultivated profitably may still raise sheep and earn a comfortable livelihood. He may maintain his family in comfort, educate his children, and leave his survivors with the means of decent and independent living. The yellow dog is a superfluity. He puts up a picturesque fight at times, makes an interesting addition to a red-wheeled wagon, and in various other ways contributes to the gaiety of nations. No con hunt is complete without him, for he is the only variety of dog that can tackle the really able con with success. He fulfills a certain sanitary function on the farm by reason of his great capacity as a consumer of pot liquor and kitchen refuse, and he is valuable as a watch-dog, be-



YEARELING SUFFOLK EWES. Bred and Owned by the Iowa Suffolk Sheep Co., Atlantic, Iowa.

find men who have confidence enough in the future to put their money into these classes of stock. These men are shrewd, intelligent young men with business ideas and push in them.

Don't make the same mistake over and over. When a mistake, or a bit, too, for that matter, make a memorandum, stick up a sign, and see to it that a lesson has been learned that is not to be forgotten.

The sheep farmer of to-day does not have to depend on his wool clip as the only revenue from his flock. He may have a few mutton lambs coming on, two crops a year, if he has a mind to; a few wethers ripening for the butcher; a few old ewes taking on the finishing touches, that can be sold at any time for cash. There is nothing slow about sheep nowadays.

promoting the purity of the breed, and providing a reliable guarantee to buyers by maintaining a register of pure breeds, which has already been of direct benefit to those who have imported these sheep into the United States.

It has scarcely been three years since the first Suffolks were introduced into the United States by the Iowa Suffolk Sheep Company, but their coming has already been recognized as a solid acquisition to the Iowa farmers. Mr. Geo. Franklin, the Secretary of the Association, writes: "One of my yearling ewes, one year and nine months old, just after coming off the vessel, weighed 200 pounds. My buck lamb, nine months old, weighed 195 pounds. Last Spring one of my lambs when seven weeks old weighed 85 pounds. He adds: The Suffolk is a better sheep than we expected."

WOOLENS AND WORSTEDS.

What is the Difference Between Them?

Col. Switzer, in his official report on wool and manufactures of wool to the Treasury Department, gives the plain answer to the question, as follows: There are two great classes of manufactures using wool as a raw material. In the one where carded wool is employed the goods are called "woolen fabrics"; in the other, where the combed wool is used, the goods are called "worsted fabrics."

The Romans established a woolen manufacturing establishment at Winchester, England, soon after their conquest of the country in the year 55 B. C. It is a presumption that no woolen goods were known previous to this time to the English people, but as they had flocks, sheep giving wool suited to making of the finest cloths, it is safe to conclude that they had some knowledge of fabricating clothing suited to their wants. Certain it is that the Britons appreciated their opportunities, and 712 years later, when the Roman yoke was thrown off, they had the skill, inclination and means of perpetuating and extending indefinitely the manufacturing and controlling of the wool and woolen trade of the world from their domestic fleeces for more than 1,500 years without a rival. It is a fact, too, that the historical town of Winchester, England, has always been engaged in the manufacture of woolen goods. The history of the wool and woolen industry of England is the history of England's civilization, rise, and supremacy of the nations, the mastery of the seas in controlling the trade and commerce of the world—a truly wonderful record that never fails to interest the student of history and political economy.

"Dyed in the wool" came into vogue from the fact that the dyed woolen cloths did not hold their color as well as those cloths made from yarns previously dyed.

In the year 1656 the first weaver who settled and commenced weaving woolen cloth at Lowell, Mass., was encouraged so to do by a grant of 30 acres of land.

THE SHEEP IN CENTRAL ALABAMA.

What are They Worth, and What are They Like?

A Birmingham, Ala., man writes: The common sheep of the country can be purchased for about \$2 per head, and will shear about six pounds of fleece, but would shear 10 pounds if crossed with a better breed.

This climate is unusually favorable for sheep, since the flocks do not require to be housed or fed through the Winter.

The Summers throughout this region do not show as high a temperature as occurs at the North, and the Winters are in no sense comparable to that experienced in the Northern States. The mountain plateaus are delightful sheep pastures during the Summer, and the valleys make a perfect sheep paradise for Winter uses. The soil is rich, and these pastures afford feed every day of the best and in most abundant supply. Here is the place to raise mutton lambs, and the demand exceeds the supply every year, and is increasing every year.—F. T. A.

A New Machine for Judging Sheep.

Mr. C. F. Darnell, of Indiana, has invented a machine or device for measuring and determining the good and bad points of the body of the sheep under the wool. The name of this machine is known, perhaps, as "The Little Detective." This mechanical outline is said to do its work perfectly, and a perfect drawing of the sheep is obtained. Mr. Darnell proposes by this profiling machine to ascertain which sheep to keep in the flock, and to use it in the show-ring, thus doing away with "the sheep-breeder artist, who by trimming commands public applause" and "wins prizes with sheep that no one would think of using in his flock."

This machine is expected to simplify and correct the showing and judging of sheep in all show-yards. The expert judge will be no longer wanted, especially such as does not or cannot find out the true form and symmetry of the animals competing for prizes. It is presumed that Mr. Darnell will furnish charts and diagrams, so that "the small boy" who can carry the "device" into the show yards can readily calculate the measurements and by the ready reckoner give the verdict of "The Little Detective" as to which sheep shall wear "the blue" and "the red."

There will be no more protesting against the judgment of the judges, thus saving the fair managers no end of perplexity and annoyance. Sheep breeding is to be one of the exact sciences to be determined by mechanical niceties that are infallible and above suspicion; that defeats all tricks and tricksters, whether intended or official; that settles all differences in judgments, and gives a correct standard that an expert or a novice cannot gainsay or dodge.

It is not known as yet whether this machine will be placed on the market to be bought by those who can afford it, or whether it will be controlled by a royalty for the benefit of fair associations. There has been a long-felt want of some correct device to defeat the cunning trickery of exhibitors and the human frailty of expert judges and fair juries.

Angora goats are better weed destroyers than sheep, because they like to stand on their hind legs and nibble the tops of plants and shrubs. We have had them to entirely exterminate polkberry alder, hazel, and like plants.

One of the ablest sheep feeders in the country, who feeds all breeds, and grades, said recently in an address: "The quality of mutton has nothing whatever to do with the kind of hide it is wrapped in."

THE WOOL-SACK.

The Lord Chancellor's Seat.

This historical and memorable tribute of the British Government to the wool and woolen industry is described as a cushion stuffed with wool, especially that on which the Lord Chancellor sits in the House of Lords. It is a large, square bag of wool without back or arms and covered with green cloth. It is located in the center of the House, for the use of the Lord Chancellor.

In the Quarterly Journal of the Statistical Society, March, 1859, Mr. John L. Hayes said: "The statute-book of England has for centuries been covered with enactments for the protection and regulation of this woolen manufacture. To the present day, in the House of Lords, the Lord Chancellor and Judges sit upon wool-sacks, as a constant memento of the duty they owe to that branch of industry which was of old pronounced to be 'the flower and blood of England.'"

John May, in Smith's Memoirs, 1613, said: "The 'wool-sack' upon which the Lord Chancellor has sat for ages as the President of the House of Lords, is a symbolic tradition of the importance the nation has always attached to the wool industry. "He quotes: 'The antiquity of wool within this kingdom hath been beyond the memory of man, so highly respected for those benefits therein that customary use has always been observed to make it the seat of our wise and learned judges in the sight of our noble peers in the Parliament House, to imprint the memory of this worthy commodity within the minds of those firm supporters and chief rulers of the Land.'"

The Australian Year Book gives an account of the wool-sack with commendable pride in the following words:

"It is best described as an ottoman, having neither back nor arms, no luxurious change in its shape having been made since its first introduction, which dates from the time of Henry VIII. or Queen Elizabeth; a difference of opinion exists among historians upon the point. From the 'Lives of Chancellors' we read that in an act respecting the precedence of the Lord Chancellor, it is stated that he should take his seat upon the uppermost sack in the Parliament Chamber, called the Chancellor's 'wool-sack.' Others state that when an act of Parliament was passed in Queen Elizabeth's reign against the exportation of wool from England, the Chancellor took a lock of wool from his seat as a memento of the act. It is also known that in the earlier days of history sacks were placed for the members to rest upon, and no doubt, being the staple commodity in England, it was chosen as the seat of honor for the President of the Council; but probably its official recognition and establishment may be reckoned from the reigns of the Tudor Sovereigns.

"Upon one memorable occasion during the present century, during the great debate on the Reform Bill, Lord Brougham, in an ecstasy of enthusiasm, threw himself upon his knees on the wool-sack at the close of his own speech.

"Curiously enough, when the Lord Chancellor makes a speech he cannot do so from the wool-sack, but has to move to the top of the Dukes' Bench, on the left of the throne, he taking precedence of all temporal peers, save Princes of the royal blood. History explains this by saying that in olden times the Lord Chancellor was not of necessity a peer, and, therefore, had no right to a seat in the Lords' Chamber, so the wool-sack was brought in, but is still according to law a part of the House, and therefore a speech cannot be made from it."

Not an Idle Boast.

H. G. McDowell, writes: We have more of the Merino Columbian Grand Sweepstakes winners and high prize animals and selections from the best exhibits of the world on our farm now than any other place in the world. At the end of the World's Fair we purchased a stud flock of American Merinos from the L. E. Shattuck entire exhibit, our choice, with Challenge at head of stud, also the best five in the Homestead exhibit, including the Sweepstake Ram Hammer at the head of herd, and a half interest in Stambour, second prize two-year-old Rambouillet. Have also a choice selection from President Grinnell's flock; the whole constituting as good a stud as ever was in America.

THE GARDEN.

Pluckings.

Gather egg-plants before they begin to turn black, and keep potato-bugs away by hand-picking.

If you intend to plant kale, sow Dwarf Erfurt in rows three feet apart, a pinch of seed two feet apart in a row.

Attend to the cutting of all sprouts, briars and shrubs, which are undesirable and should be killed out, during this month.

The first plant which forms upon the runner of a strawberry plant is said to be the best, and should always be saved for transplanting.

It is time to sow Winter radishes. Long Black and White Spanish are good. The latter is very sweet. A very mild variety is said to be the California Mammoth.

Picking onions should now be worked up or put on the market. The large onions should have the bulbs pulled and be left on the ground to cure when most of the tops have withered away.

Too much cultivation cannot be given to cabbage and cauliflower. Keep the green worms off with hot washings, or tobacco tea, before they reach into the heart, where you cannot get at them.

All the vegetable rubbish on the farm can be profitably used for mulching the orchards and berry patches. Thousands of tons of such material are wasted each year simply because the value of a mulch is not appreciated.

Some gardeners have been troubled with black-spot in tomatoes. The fungus of the potato rot attacks them on both leaf and fruit. There is no remedy after it gets full possession of the vines, but an early use of Bordeaux mixture is a preventive.

Current bushes in vigorous growth always make a superabundance of wood, and should be trimmed by cutting out the old canes that were weakened by age and fruit bearing. Also thin out new growth, and cut back the ends of long, slender branches.

An amateur gardener has discovered a way to produce late strawberries. The first flowers were cut and a new set was not formed for two weeks. The crop was not so large as if left unmolested, but the average market gardener can hardly afford the treatment.

Boil three pounds each of sulphur and freshly-baked lime in six gallons of water until there is but two gallons of it. Pour off the clear water, and bottle for use. A gill of this in five gallons of water makes a solution which, sprinkled upon plants, will prevent mildew.

Leguminous plants are most highly enriching to the soil, owing to the peculiar property they have of absorbing azote directly from the atmosphere, and assimilating and fixing it in their bodies. They then give it as manure to the soil on which they grow and are left to decay.

It is now time to cut out all the old stocks among the raspberries and blackberries. Leave but three or four of the strongest of the new vines, and treat the rest as weeds. The strength of the plant will make these large and vigorous. Pinch off the top when about five feet high.

A pinched-back raspberry becomes self-supporting and needs no staking, if the work be done as soon as the young canes reach the proper height. It is probable that if pinched off late in the season, few branches only would come out near the top, which would make it top-heavy.

Judicious rotation of crops is thought to be the best precaution against clubroot. Cabbage or any allied crops should not be grown on the same soil oftener than once in three years. If lime is frequently applied, or if the soil abounds in it, this rotation of crops will not need to be so strictly regarded.

To prevent head lettuce from going to seed prematurely, a German paper advises to cut half through the stalk, just at the surface of the ground, with a sharp knife. The remaining half of the stalk allows the passage of sufficient sap to keep the plant alive, but not enough for seed-bearing growth.

Better Than Sprinkling.

EDITOR AMERICAN FARMER: I think F. F. Addison's flambé lights a grand thing. I have seen farmers burn stumps and brush, far enough away from their trees and shrubs to prevent harm to them, to kill moths and other pests. Some of the farmers here build small fires around and in among their cabbages or attract the cabbage moth, and thus prevent the moth's egg laying, which is better than sprinkling. It is true that the cabbage moth does not work at night; but the light from these fires gives the moth the impression of sunlight, and she is drawn or attracted by it, the same as the moth is by the flambé lights. The cabbage moth works on sunny days; and when she is attracted by the fire she hovers over them until at last she gets singed and goes down to be destroyed by the flames.

In our climate it takes longer than 24 hours for the eggs to hatch. Kansas lies in a warmer latitude than southern New York, hence the greater the heat the quicker the egg hatching is produced. Here in the East we use salt as a fertilizer; a tablespoonful scattered around the roots of the cabbages three times during the season.—A. F. D.

"Don't Tobacco Spit or Smoke Your Life Away."

None of little book just received—tells how to avoid the wonderful, harmless, economical cure for chewing, smoking, cigarette and pipe habits. You run no physical or financial risk. Your money is absolutely guaranteed to be returned. Write for the book—FREE. THE STERLING REMEDY CO., Box 2, Indiana Mineral Springs, Ind. Agents

Potato-Bug Enemies.

There are said to be about 50 enemies of the Colorado potato beetle. Prof. Riley, late of the Department of Agriculture at Washington, in a little volume devoted to "Potato Pests," issued many years ago, recorded a list of nearly 40, and several have been found since. Numerous birds are known to feed upon both beetle and larvae, such as the crow, rose-breasted grosbeak, etc. Ducks are not too fastidious and sometimes chickens and turkeys eat the insect in all its stages. The skunk and toad among the wild animals may make inroads upon a numerous supply of potato bugs to reduce their number, when the opportunity offers, as will reptiles, against a common enemy.

Some of the spiders will devour the larvae in a greedy manner, and sometimes the beetles are found covered with minute brownish dots not larger than a pin's head; these are mites which cling to the hard shell of the potato bug and slowly sap its life. In fact, the most effective enemies of the potato pest are found among the insects. Most of these prey upon the eggs and larvae, but a few attack the beetle. All beetles belong to the Coleoptera, so that the pest finds many enemies among its own order. Among those of importance are the lady-bird family, not less than a dozen of which perhaps feed upon the beetle. The eggs of these lady-bird beetles closely resemble those of the potato beetle in shape and color, but a trifle smaller, and are often laid in the same places. The lady-bird larvae are more voracious in their habits than are the beetles. They attack the eggs of the potato beetle principally, but some of the larger species attack the fat grubs also.

Then there are several species of tiger beetles and ground beetles which devour the larvae or beetles. All of the insects named destroy the potato beetles by mastication with their jaws. In addition to the biting insects, several bugs belonging to the order Hemiptera obtain their food by suction, piercing their victims with a sharp beak. The squash bug is an example of this group of insects. They are very strong and active and the young of one species, the spined soldier bug, are often seen with a Doryphora larva, five times its own size, upon its outstretched beak. The dozen or more species of true bugs thus attacking the potato beetle, feed mostly upon the eggs and fat grubs.

There are also true flies, or winged insects, belonging to the order Diptera, and certain large Asilids flies, which pounce upon and suck the vitals out of the larvae. Often one of the most efficient enemies of the potato beetle is the Tachina fly, which is a true parasite. This fly resembles in color and size the common house-fly, the female of which attaches a single egg to the body of a fat grub, which becomes glued to it and hatches a small footless maggot which burrows into the body of its living victim. The victim, however, instead of finding its way into the ground and becoming a pupa and eventually a beetle, shrinks and dies, while inside its skin the parasitic maggot contracts into a hard brown puparium and in due time comes forth to continue to do its deadly work as a perfect fly. The effects of these enemies vary with the seasons, which are favorable or unfavorable to them, and the rest must be done by the use of Paris green, which has proven a safeguard to the potato grower.

New Chinese Vegetables.

Prof. Bailey, of the Cornell Agricultural Experiment Station, has recently been making tests of some Chinese Vegetables the seed of which he obtained from the gardeners of that nationality around New York City. Although many of the vegetables were of little value, some of them may with profit be introduced into the American garden. Of these the Pe-Tsia, or Chinese White Cabbage, which has been cultivated in Europe for some years, is of the most importance. It is an annual plant, and has much the habits of the Giant Cabbage. The Pe-Tsia needs a moist and cool soil for its best development. If the plants are left too long in the seed-bed they tend to run to seed, and the same is the case if set upon a hot or dry soil. The plant is as hardy as the ordinary cabbage, and takes advantage of the cool weather of September for its best leaf growth. The seed are usually sown in the seed-bed in June, and transplanted when crowding begins, producing heads in September and October. If cool and uniformly moist soil is provided, the plants may be started as late as July and August.

The head of the Pe-Tsia is never solid like that of the cabbage, but is rather a long and loose roll of soft leaves, the inner ones becoming blanched and very crisp. In order to keep the head compact and tender, its top leaves are tied together when nearly mature. An average core, or compact portion of the head, will measure ten or twelve inches in length, by a third or half as great in diameter. The weight is between three and four pounds. The head is eaten in the same manner as ordinary cabbage, and it affords an excellent dish. It is milder and sweeter than cabbage. In China it is generally served uncooked, being shredded with sugar and vinegar.

To Winter Potatoes.

Dig a square pit in a situation sloping to the south and east large enough to hold 10 to 15 bushels. If more are to be kept, make more pits. Make a board frame with spaces of 3 in. between the boards. Lay straw and dirt on the boards deep enough to prevent freezing. This manner of pitting cannot be done on clay ground. Another plan is by packing in barrels and boxes with dry sand or clover chaff in layers, so that the sand and chaff is well among the potatoes. Keep where they will be cool, but not freeze.

SUGAR IN KANSAS.

The Industry Now Seems Solidly Established.

After a great many failures, sickening disappointments, and also a great deal of shameless swindling, the sugar industry seems to have reached a rock basis in Kansas, and will henceforth develop healthfully and strongly. The mills at Fort Scott and Medicine Lodge have been giving fairly good returns for two years. The larger of them was built at a cost of \$125,000 and has a capacity of 200 tons of cane per day. The yield secured gives the mill a capacity of about twelve tons of sugar per day. Over 3,700 acres of cane has been grown this year under contract for it, and the average price will be over \$1.50 per ton.

The sugar season in Kansas begins about the first week in August and continues until the first heavy frost. A few years ago there was not much cane to be had before the first week in September. The sugar mills and sirup factories had but a short season in which to "work up" the crop of cane, for occasionally a frost comes about the middle of September. The past few years have produced a great change, both as to the time of maturing the crop and the amount of sugar contained in the cane. These improvements have been the results of the work carried on at the Government sugar experimental station at Sterling. Prof. A. A. Denton, an expert chemist and recognized sugar authority, has had charge of this work since the establishment of the station.

Ten years ago 97 pounds of sugar per ton was the average yield from Louisiana sugar cane; last year the average was 216 pounds. Five years ago the best specimens of sorghum tested 140 pounds per ton; now those varieties in common use give 250 pounds. This is the result of the work prosecuted at the Sterling station, where over 100 varieties were taken and subjected to scientific tests and careful selections. By planting seed from the best specimens of the choicest varieties and by crossing between the best results thus obtained, the sorghum growers this season hope for still greater returns per ton.

In sugar cane and sugar beets the best yields are from 200 to 225 pounds per ton. With this average yield, sold at 3 cents a pound, every ton of sorghum cane is worth \$6, at which rate sorghum sugar can be made profitably without bounty or tariff.

Kansas has an immense area of fine soil which is specially adapted to sorghum growing. It will grow and mature with half the moisture required by any other crop. Under these circumstances a ton of unmanufactured sugar can be delivered at the factory in the shape of sorghum cheaper than it can in that of beets, either in this or any other country. The unsolved and only difficult feature of the problem is not so much the amount of sugar in a ton of the sorghum cane, but the present unsatisfactory method of removing the impurities and clarifying the cane juice. This is the problem the Government chemists at Washington are supposed to be trying to solve. When they do it, the Kansas farmer with a cheap apparatus can make crude muscovado sugar for home use and the local trade, while the sorghum sirup factory can make a sirup which will find ready sale at refineries for sugar extraction, and the sorghum sugar mills can get as great a yield as is now secured from sugar cane.

Ensilage by Rule of Thumb.

Sir: "Banffshire" query in your issue of the 25th ulto. brings to mind the following:

A friend of the writer's in a very wet season a few years ago had a great extent of meadow cut. Part had been got into small cocks, part was in windrow, and a great deal as the mower had left it. It had been raining almost daily for weeks, and he felt in a sad plight. Persuaded by a neighbor who had proved the method, he set to, heedless of condition, and of the weather meanwhile, and had the crop stacked, building the stack by drawing the loads, squaring up the sloping ends at the finish, and topping all over with a thick covering of clay soil. I visited my friend the winter following, and saw a section of the stack. The ensilage was of a uniform dark-brown color, and had an agreeable smell; and I saw a lot of splendid blue-gray polled bullocks, bought in Carlisle the previous autumn, and almost ripe for the butcher, eating it as they liked it. The owner said "they never orted a straw."—North British Agriculturist.

Flathead Valley, Montana.

Kalispell Graphic: Four miles north-east of this city Mr. Nye has a farm of 135 acres under cultivation that will yield fully 6,000 bushels of grain. One stand of grain that attracts special attention is a thirteen and one-half acre tract of Scottish Chief oats which per acre yield from ninety to 100 bushels per acre. Mr. Nye has in wheat, oats, rye, barley, alfalfa, timothy, broom corn, root crops, and vegetables. The estimated yield of grain does not include the immense quantity of potatoes and garden truck that he will have for sale. To cultivate and care for this entire farm has required the time of only one man and one team and an additional team one week. Adjoining Mr. Nye on all sides can be seen splendid stands of wheat, oats, and other grain. What can be said of one farm can be said of any other in the Flathead Valley that has been as well and carefully farmed. A field of red clover which we found stood three feet high and was of excellent quality. On the same farm the orchard grass attained a height of five feet.

Remember always that farm implements have to be used again next year, and they should be put where they will be safe from injury.

Sound Reasoning.

EDITOR AMERICAN FARMER: For the year or more (I think) I have subscribed for THE AMERICAN FARMER and read what you have written in regard to the tariff, I think you have been correct on that subject.

The so-called free trade stuff appears to me would be more fittingly named robbery stuff.

The idea of our people losing three hundred millions of dollars per annum by buying foreign stuff, instead of raising or manufacturing it ourselves, appears to me a great misfortune to us; being about one billion or a thousand millions of dollars every three years. No wonder there has been a great cry of shortage of money during the last year throughout the country.

It seems to me as if the people who think money is a good thing for us to have in this country, ought to be able to understand that then we should keep the money here, not sending it away by hundreds and thousands of millions of dollars.

I think it is far better for us in the long run to pay \$5 per pound for sugar of our own manufacture, than five cents per pound for foreign manufacture; that it is better to pay \$5 per pound when we have the \$5, than the price to be five cents when we have not got the five cents; but I am confident by manufacturing our own sugar it will be cheaper for us in the long run. And also cheaper and better for us to do all our own manufacturing, and raising our own food as far as possible.

Legislation having a direct tendency to pauperize this country is, I think, or should be, criminal legislation, if the parties thereto know what they are at.

I do not believe in labor with us being reduced to a starvation basis of from one to 10 cents per day, and having to provide for a family on that. If on account of better conditions in this country for the laboring man there is too great prospective immigration of undesirable classes, then I suppose we should have laws enforced for the protection of our own people.—WM. W. WATKINS, Yuma County, Ariz.

A Word for Wasps.

"After what I observed in the ways of wasps last year, I have not killed a single queen wasp this," writes a correspondent to an English exchange. "In conjunction with the ladybirds, I give them the credit of saving a field of swede turnips which was badly infested with aphids last July, and also of clearing a piece of tares from the same pest. The wasps were very busy in both fields, anyhow, hunting about under the leaves of the plants while the infestation was at its worst, and with the assistance of the rains about that time, a clearance was effected in time to save the plants. Then, again, in October, the wasps waged war against the common fly in particular. During the chilly mornings, while the flies were torpid with the cold, I noticed dozens of wasps hunting for, and carrying off, flies from the end of a wooden building on the farm. Wasps are, evidently, meant by nature to play the part of automatic insect checks, as the same weather which is favorable to the well-being of wasps must be equally favorable for hosts of other insects, too. Then, as to fruit, wasps certainly eat a lot of fruit; but when wasps are plentiful so also is fruit. The absence of frosts and cold rain in Spring is good, both for the setting of the fruit and the preservation of the queen wasps. No doubt, in spite of all this senseless slaughter, plenty of them will survive to carry on their useful and necessary work."

The Night-Biting Fly.

The pest which worries horses and cattle at night is scientifically known as *Stomoxys calcitrans*. It looks much like the common house fly, but has a very much worse bite, and works only at night. It is closely related to the terrible African "tsetse fly" whose bite is fatal to horses and mules. The only remedies are keeping the stable clean, drenching the floor with water in the evening, scattering a few handfuls of common gypsum upon it, and sponging off the horses with a very weak kerosene emulsion before leaving them for the night.

Fairs for 1894.

Alabama, Southern Exposition, Mont.	Nov. 6-16
California, Sacramento, Sept. 1-10	Sept. 1-10
Connecticut, Meriden, Sept. 18-21	Sept. 18-21
Delaware, Dover, Sept. 18-21	Sept. 18-21
Florida, Jacksonville, Sept. 18-21	Sept. 18-21
Georgia, Atlanta, Sept. 18-21	Sept. 18-21
Illinois, Springfield, Sept. 18-21	Sept. 18-21
Indiana, Indianapolis, Sept. 18-21	Sept. 18-21
Iowa, Des Moines, Sept. 18-21	Sept. 18-21
Kansas, Wichita, Sept. 18-21	Sept. 18-21
Kentucky, Lexington, Sept. 18-21	Sept. 18-21
Massachusetts, Boston, Sept. 18-21	Sept. 18-21
Michigan, Detroit, Sept. 18-21	Sept. 18-21
Minnesota, Minneapolis, Sept. 18-21	Sept. 18-21
Missouri, St. Louis, Sept. 18-21	Sept. 18-21
Montana, Helena, Sept. 18-21	Sept. 18-21
Nebraska, Lincoln, Sept. 18-21	Sept. 18-21
New Hampshire, Granite, Sept. 18-21	Sept. 18-21
New Jersey, Newark, Sept. 18-21	Sept. 18-21
New Mexico, Albuquerque, Sept. 18-21	Sept. 18-21
New York, Syracuse, Sept. 18-21	Sept. 18-21
North Carolina, Raleigh, Sept. 18-21	Sept. 18-21
Ohio, Columbus, Sept. 18-21	Sept. 18-21
Oregon, Salem, Sept. 18-21	Sept. 18-21
Pennsylvania, Philadelphia, Sept. 18-21	Sept. 18-21
Rhode Island, Cranston, Sept. 18-21	Sept. 18-21
South Carolina, Columbia, Sept. 18-21	Sept. 18-21
South Dakota, Aberdeen, Sept. 18-21	Sept. 18-21
Texas, Dallas, Sept. 18-21	Sept. 18-21
Utah, Salt Lake City, Sept. 18-21	Sept. 18-21
Virginia, Richmond, Sept. 18-21	Sept. 18-21
Washington, Seattle, Sept. 18-21	Sept. 18-21
Wisconsin, Milwaukee, Sept. 18-21	Sept. 18-21
Wyoming, Cheyenne, Sept. 18-21	Sept. 18-21

"Sold Under A Positive Guarantee" is a very forcible proposition made by the Portland Mfg. Co., of Portland, Michigan, whose advertisement appears in another column of this issue, in which they advertise for Agents to sell their Terrier's Perfect Washing Machine. This machine is warranted to wash garments or fabrics of any kind as clean as can be done by the hand on the washboard. Indeed, such is the confidence the Company have in their washers that they will ship them on trial at wholesale prices, and if not satisfactory your money will be refunded.

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THE HIRED MAN.

(Continued from first page.)

waited on him as has been your custom with native-born help in the old time; and if you have the means it is far better to have the hired man's room fixed up in the barn rather than in the house—it saves an immense deal of female annoyance and discussion over the want of personal neatness and cleanliness of perhaps an excellent man otherwise. Such discussion coming to his ears, as it always will sooner or later, usually angers and discontents him, and impairs the value of his service. When the nights grow long and the air chill, then invite him to sit by the kitchen fire, and while there smoke, if you and your family care nothing about the fumes; if they do, never let him do it in the house. Tell him all this patiently and decidedly at the outset and you will not have the least trouble following on that score.

You take these preliminary steps with the foreigner and you do precisely what is right and wise; he has not been brought up as you have to certain habits of eating and sleeping, and it is rather pleasing to him to be left alone and to himself as much as possible in these matters, and it is vastly more pleasant for yourself and your family.

AS TO THE DAILY LABOR.

Of these foreigners who now seem to be about all we have to hire, I want to frankly say that they do fully as much around the farm and quite as well as our old-time help, provided we leave nothing for their judgment as to when, where, and how to commence. We must start them day by day, and never relax a firm and decided supervision. I know that this is distasteful and wearisome to many farmers who become impatient and restless when served by such men, and who are now letting their farms run to weeds, grass and briars rather than be bothered by that kind of help, even if they can get no other. They forget and strive to forget the fact that the hired man on the farm of their father and their grandfather is a man that they will never be able to hire again.

After all, seriously speaking, do we really miss the intelligent and social help of our progenitors, in so far as the material success of good farming goes? I think not. We have such a mighty lever of assistance in improved utensils and machinery, and improved stock, rapid transit for our produce to market, with daily quotations of its value at our hands—all infinitely better than the old-time hired man without them, even if we are obliged to hire the wooden foreigner to help in running them and do the manual labor left.

When we turn to the consideration of that female help of the old time and what we now have, I am ready to declare that our loss is great and irreparable. I do not know what our wives and daughters are going to do in the country to-day unless they stand ready and qualified to do everything that has to be done about the house at any hour. The difficulties that hem in this question of the female servants are simply too much for one to overcome. I can manage the males, but the cooks, the wash-women—they are inscrutable.

Your wife gets a good girl in the kitchen. She hardly gets more than established and known as such in your neighborhood than she is off and married; while the poor, slatternly, idle women and girls drift from house to house a veritable trial and torment to their suffering employers.

Woe to the wife of the American farmer to-day who is at all dependent on her hired help in the house. She has a subject vastly more difficult to handle than her husband has in his work in the barns and on the farm. Not only must she understand how to do everything herself about the house, but usually she and her daughters have to do it all themselves in sheer self-defense.

Cheese for Family Use.

Nice, small cheeses may be made for home use in this way: The milk of two cows may be set at night in a deep pail in cold water. This will check the rising of the cream. The morning milk may then be mixed with the milk of the previous evening, after it has been warmed to the same heat as the new milk. The rennet, of which one ounce is enough for 100 pounds of milk and 10 pounds of cheese, is stirred in the warm milk in a proper vessel. This is covered and left until the curd is made and becomes tough enough to be lifted by the finger. It is then cut by a long-bladed knife into squares of an inch, so as to liberate the whey. When the whey has partly separated it is dipped off by means of a shallow dish, without breaking the curd. The whey is then heated to 100°, and is poured onto the curd, which is covered to keep in the heat. After half an hour the curd will become tough enough to lift without breaking, when the whey is all drawn off, and the curd is broken up with the hands and heaped to permit more of the whey to drain off. This will take up half an hour. The curd is again broken, and the whey carefully pressed out by hand, so the cream may not escape. It is then left another half hour, when it is again broken, and salted at the rate of two ounces of finely-ground salt to seven pounds of curd, and is placed in a wooden hoop or mold, lined with a clean cloth dipped in the whey. The curd is pressed into the mold firmly, and needs no weight or pressing. When it has settled in the mold it is taken out in the cloth, and set on a board, and turned once a day until it has formed a crust. It should then be rubbed with butter and turned occasionally during the curing, which will require two or three months in a temperature of about 60°.—New York Times.

Some growers who have tried it speak highly of muriate of potash as a fertilizer for sweet potatoes.

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F. Schuppan, a German experimenter and successful student of bacteria, finds that ordinary milk, after six hours' exposure to the air, contains no less than a million of these germs in a cubic centimeter; that is, a square solid somewhat less than four-tenths of an inch each way. He finds, further, that this quantity may be greatly reduced by careful feeding and watering, and the right care of the milk. Milk contains more or less of these germs when it is drawn from the cow, but not in sufficient quantity to injure it, but these even would be less if due care were taken in feeding and watering the cows. After the milk is drawn it should be immediately strained and conveyed to a place where the air is pure and of a low temperature.

That Big Cheese.

A 70-pound block of Canada's World's Fair mammoth cheese was sent back from England to the Dairy Commissioner of that Dominion. A chemical analysis showed that it contained 32.06 per cent. of water, 34.43 per cent. of butter fat, 28.00 per cent. of curd (casein and albumen), and 5.51 of ash, salt, milk sugar, etc., and the chemist stated that the cheese was sound and "eminently satisfactory in all particulars." It compared most favorably with the well-known and high-priced brand of English Stilton cheese in all essential elements.

Italian Wages.

The British Vice-Consul at Ancona, in a recent report on the trade of that district, gives an

A LAST RESORT.

By ADA E. FERRIS.

A DARK night and the sky hidden by a mass of hurrying clouds. A raw, chilly wind, the ground all mud, the tall grass and trees dripping from heavy rains. Just emerging into a dark cornfield from still darker woods a young man, his clothing drenched and mud-stained, his face haggard and desperate, and his whole attitude as he leaned heavily against the rail fence telling of utter exhaustion. He was worn out. For more than two hours he had been flying for life over a country imperfectly known to him though familiar to his pursuers.

More than once he had been compelled to retrace his steps when every moment was precious and every step through the yielding mud required an effort. Worse yet, there was no possibility of throwing the followers off the trail. Every step left its plain impression, to be followed as fast as horse could trot, and capture meant sure and swift death. No wonder he was desperate.

Turn which way he would, Gilbert Hazelton could see nothing before him but steady and disgraceful death. Never to see the sun again, may not even a friendly face! Was this the end of the bright hopes with which he had kissed his mother good-by only two short months before? It seemed like a far-away dream now. He had lived ages of fear and agony since then, gone through unspeakable humiliation and dread.

He had been accused of murder, tried for his life, found guilty and sentenced to death. His letter to his friends must have been misread, for they had not come to his relief. Poor and alone among strangers, who persisted in believing him guilty of the crime, he had wandered poor David Westford, Gilbert had yet fought bravely for his life. Some few had been convinced of his innocence, and his lawyer had succeeded in obtaining a new trial, in which new witnesses might at least prove an alibi.

But when this word went abroad the townspeople were furious. They had seen more than one undoubted criminal escape through some technicality. Were they now to see the murderer of the easily-bought perjurer of some worthless companions in crime? They vowed it should not be. Last night at dusk groups of stern-looking men stood before the jail grinning together, and a whisper in the air warned the Sheriff what was coming.

The jail was old and rickety. He could not defend it, and his resolve was quickly taken. In the early dusk the prisoner was sent out by a side door, the Sheriff himself remained to make sure no violence did not make a mistake and seize some other victim. But he and they were soon in the hands of the mob. In this emergency, the boy, who was firmly convinced of the prisoner's innocence, released him, demanding only a promise to rejoin him at a place appointed, and himself turned back to throw the pursuers off the trail. Gilbert fully intended to keep his promise, but in the darkness he missed his way, and the bloodhounds in the rear caught his trail.

Now, for two hours, which seemed like a lifetime, he had been running for his life, and the unknown country and the little strength that two months of confinement and terrible anxiety had left him. Nothing but utter desperation could have driven him another rod. But when a shout came faintly from the rear across the strip of cornfield, through the fence, and out on a well-travelled road.

To one less utterly worn out this would have given a glimmer of hope, but here at least the mud had become liquid, and the unknown country and the little strength that two months of confinement and terrible anxiety had left him. Nothing but utter desperation could have driven him another rod. But when a shout came faintly from the rear across the strip of cornfield, through the fence, and out on a well-travelled road.

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door, and leaned, utterly exhausted, against the doorpost. "If I only knew there were women inside! A woman would be merciful. But it may be some stern old farmer, who will only order me off, and set the dogs on me."

The window was not a step away. He crept to it and looked between the curtains. A plain, neat farmhouse mother and daughter, sitting by the table before the fire, the mother sewing, else in sight, yet Gilbert gave a smothered gasp and fell back in despair. "David Westford's mother and sister! That settles it!"

He had seen both faces at the trial—the elder, and patient under its silvery hair; the younger, pure, pale and clear-cut, thrown into strong relief by the dark eyes, long jet lashes and heavy, black brows.

He stood there still, hopeless and helpless, when there came a sudden girl had ceased reading. He looked in and saw her pick up a pitcher and come toward the door. A moment more and she had come out, all unconscious of the man so near, gone straight to the pump, on which the lamplight shone, and was filling her pitcher. Nerved by desperation, Gilbert stepped toward her.

"I will appeal to her. Why shouldn't I? I did not kill her brother. She may pity me. She is a woman, and they are half-Quakers, I have heard," he muttered—and aloud, "Miss Westford, help, for God's sake!"

The clanking of the pump ceased. The girl looked around with a startled air. "Who spoke?" she demanded. "A fugitive, utterly exhausted with flight from a bloodthirsty mob. They are close at my heels. I can't go farther, and I am doomed unless you have pity and give me help or concealment."

"Who are you?" she inquired, and with dreadful sinking at his heart he gave his name, "Gilbert Hazelton." She uttered a sharp cry and looked away where the distant lanterns were gleaming through the cornfield—the pursuers on his track.

"I must ask mother," she said, and snatching up her pitcher swept past him into the house. He heard her quick voice, and Mrs. Westford's startled outcry, and in very desperation followed her in.

The old mother met him, white-haired and venerable. "So then you seek shelter here of David Westford's benevolent mother?" she said, bitterly, wondering.

"Why not? I never harmed you nor him," he urged desperately. "As true as there is a heaven above us, I am innocent of what is laid to my charge. It will be proved when my friends come. But that will be too late unless you help me."

Westford wavered. "These speak fair, but do not all criminals the same? A trial was given them and they innocently the murderer of my boy?"

Thither Ernestine beckoned him to follow, pausing only to thrust the shoes out of sight. At the door she turned. "It is face. Come in!"

Did she think he would draw back? Guilt itself would hardly have done that now, with the pursuers so near. "If David can see, I know he is willing," Gilbert answered quietly.

It was a small, plainly-furnished room. Mrs. Westford had drawn the bed from the wall and thrown back the last breadth of carpet, revealing a tiny trap-door. At its entrance she opened it, and motioned him down.

"It is only four feet. You can drop that far," said Ernestine encouragingly. "There is no outer door. You will be quite safe."

Her mother smiled sadly. "How many frightened fugitives have slept ago—before the war. These need not fear. Now—by stay, these must not faint. I will bring thee food and drink."

She hurried away, and he swung himself down. It was not very easy with his manacled hands, and Ernestine helped him. His heart thrilled at the touch of her cold, trembling fingers.

"She shrinks from my touch. She thinks my hand stained with her brother's blood," he thought bitterly. But another glance at the pure, pale face relieved him. She was listening anxiously, and said with hurried kindness, "There is an old bed down there. Look, while I hold the light down. There! Even half an hour's rest will help you. But you must eat and rest in the dark, for this cellar extends under the kitchen, which is carpetless, and has cracks in the floor. Here comes mother."

Very hurriedly Mrs. Westford passed the well-filled dish and pitcher to him, reporting the mob almost before the door. "Cover up quickly, Ernestine. I am going to wake Harry."

That was her youngest son, still sleeping soundly up-stairs. She hurried away, and Ernestine quickly lowered the trap-door and pushed back the bed.

Shut down in the darkness, Gilbert groped his way to the old bed, and sank down on it in utter exhaustion. He could do no more, he felt it or death. He heard the girl's quick steps, the closing door, the louder steps directly overhead, and a slender spur of lamp-light came down through a crack. She was back in the kitchen—and there were stern voices indistinctly to be heard without. Ernestine heard them more plainly, and stood with clasped hands and pale face, praying silently, but oh! so earnestly, that the innocent, if he were innocent, might be saved, when stairs just as there came a thundering knock at the door.

Mrs. Westford had told him no more than that a crowd of men with lanterns were approaching, and it was in perfect good faith that he flung open the door and angrily demanded their business. They soon satisfied him. "The tramp that murdered your brother is at large, and we are hunting down the road, for we know he came down this way, and it looks mighty as if he had slipped into your premises and hidden somewhere. Your folks will have no objection to our searching, I reckon?"

"Not a bit. I don't think he would stop here, but if he did I hope you'll catch him and hang him to the nearest tree," the boy answered fiercely.

Then they drove away in the darkness. Ernestine spoke little; her heart beat too fast. She half-apologized for taking the dog.

"The roads would be so lonely coming back," an apology which he readily accepted. Could he resent her prudence when she had given him his life? But he could not help being intensely thankful that the dog had been asleep in the barn when he approached.

The trip was about half done when lanterns gleamed ahead, and wheels and voices were heard approaching. "The mob!" was his first thought, and under your seat till they pass! Then with a sudden joyful change in tone and manner, "Oh, it is the Sheriff! Thank heavens!"

The Sheriff was looking anxiously for his charge, but with little hope of ever seeing him again alive. Ernestine turned quickly. "Your wrists, please," and the manacles fell off. "There! You need not tell that part unless you wish. It was only—but you understand. Mother had a right to be cautious, you know."

And then the Sheriff was hailing them, and as much surprised as delighted to find his prisoner in such hands. The transfer was soon made, and with a kindly word of farewell Ernestine hastened back to her anxious mother.

At the new trial Gilbert had no difficulty in proving his own identity, and was triumphantly acquitted. Of all the warm handclaps and congratulations he received, none gave him more pleasure than those of Mrs. Westford and her daughter.

"You must come and see us," Ernestine said, blushing. "I know we were not over-polite to you, mother and I; but come again, and you will find that we can be civil."

And he did come—not once, but many times—and at last carried sweet Ernestine away as his bride.—Yankee Blade.

For the leisure hour of readers, old and young, are invited to contribute original puzzles and conundrums to the published list in two months. An asterisk (*) after the definition signifies that the puzzle is obsolete. Editor, THE AMERICAN FARMER, 125 New York Ave., Washington, D.C.

ENIGMATICS.—NO. 3.
1. KARATOLA. 2. ARKONAR. 3. RAVINING. 4. AUSTIN. 5. TOLSTON. 6. LANTOS. 7. ARGENTAS. 8. VAG. 9. BERRE. 10. VERTICAL. 11. VARIOUS. 12. GENICATED. 13. LACERATA. 14. SALTERS. 15. SAD. 16. R. 17. P. 18. GOVALL. 19. FOOLER. 20. WOODEN. 21. STABSON. 22. SLIFONS. 23. LEONS. 24. SON. 25. R. 26. P. 27. GOVALL. 28. FOOLER. 29. WOODEN. 30. STABSON. 31. SLIFONS. 32. LEONS. 33. SON. 34. R. 35. P. 36. GOVALL. 37. FOOLER. 38. WOODEN. 39. STABSON. 40. SLIFONS. 41. LEONS. 42. SON. 43. R. 44. P. 45. GOVALL. 46. FOOLER. 47. WOODEN. 48. STABSON. 49. SLIFONS. 50. LEONS. 51. SON. 52. R. 53. P. 54. GOVALL. 55. FOOLER. 56. WOODEN. 57. STABSON. 58. SLIFONS. 59. LEONS. 60. SON. 61. R. 62. P. 63. GOVALL. 64. FOOLER. 65. WOODEN. 66. STABSON. 67. SLIFONS. 68. LEONS. 69. SON. 70. R. 71. P. 72. GOVALL. 73. FOOLER. 74. WOODEN. 75. STABSON. 76. SLIFONS. 77. LEONS. 78. SON. 79. R. 80. P. 81. GOVALL. 82. FOOLER. 83. WOODEN. 84. STABSON. 85. SLIFONS. 86. LEONS. 87. SON. 88. R. 89. P. 90. GOVALL. 91. FOOLER. 92. 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OPINION CORNER.

He'd "Meat" Him.
The hog looked at the butcher
With a sad and pensive air.
And asked, when near the packing-house,
"Will you meet me over there?"

Figurative Language.
"Our hero sat in the corner of the railway compartment devouring his newspaper," read Miss Myrtle Dolan, from the latest acquisition to her paper-covered library.
"He wor devouring what?" asked her father, with sudden interest.
"His newspaper, the book says," replied Myrtle.
"Go an ye word yezin'. Oi t'ought 'twor on ye wor readin'. Abt 'n' now, he powers, he turns out to be a goat—"
Washington Star.

On the Reservation.



Mixed.



Misapplied.
 "Dere's a fine word," said Plodding Pete, as he laid down the piece of paper that had been wrapped around a ham sandwich. "Dat's a fine word, 'procrastinate.' What does it mean?"
 "It means ter put off."
 Does it? An' ter t'ink of me bein' procrastinated f'm six trains this week! Well, well!"—*Washington Star.*

Every time I go to a show, don't I come back and tell you about everything I seen? What more do you want?"—*Indianapolis Journal*.

A piece of portable fence is a very necessary adjunct to every farm.

pans are returned to the clean, flow-
embowered dairy, and in a short time
the thick cream has risen on the milk
and is at once made into butter or cream
cheeses and immediately shipped to the
consumers. Doubtless this is the most
excellent dairy district in the world, it
is surpassed by the almost equally favored
district of Isigny, in France, where
similar products are made for the most
exacting purchasers in the great City
Paris.

Honey in the Milk.

The peculiar flavor observed in the butter furnished at hotels in England, and at those on the continent patronized by English people is said to be due to the presence of honey in the butter. Says a writer in a New York daily newspaper. The proportion is one ounce of honey to one pound of butter, and the result is a decided improvement in flavor and the avoidance of all rancidity in the butter.

Cherries, on the other hand, are remarkably abundant, there being forty-five "average" reports from Scotland, and no fewer than 126 from England, and the Nuts are not much grown in the northern counties, but in the south they are rather above average; walnuts, however, suffered from the frost; strawberries have been universally scarce, and but few in quality; currants, raspberries, and gooseberries, fairly good.—*London Daily News.*

his guests some pears whose exterior seemed intact, but which internally exhibited the color of the French flag.

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THE FARMER AS A MECHANIC

He Ought to Know Something of Smithing.

BY GEO. T. PETTIT, ONEIDA, KAN.

HERE IS, WE BELIEVE, considerable wisdom in the old and oft-repeated saying, "Every man to his trade." One general line of work is all most men can carry on and secure the very best of work, as a man of his natural faculties and abilities would surely be had made a specialty of some branch that was in line with his inherent aptitude. We see, in every walk of life, the work of the man or woman who knows how to do a few things just right is more remunerative than that of the person who knows how to do a great many things in a mediocre style. Perhaps

THE TEMPTATION FOR FARMERS to spend themselves over too many lines of work is greater than in any other calling, and yet, as a rule, the successful practical farmer is something of an "all-round" man. Indeed, owing to the necessarily varied character of his work and his comparatively isolated condition, it is necessary that he should not only know how to do several kinds of work, but just when to drop one line and take up another. In asking himself the all-important question

"WILL IT PAY?" and arriving as near as may be at a correct answer, he finds there are on the farm frequent simple jobs of construction or repairing that, while they, strictly speaking, belong to lines followed by tradesmen in town, can, with the aid of suitable tools and the exercise of a little skill, be done on the farm quicker, cheaper and in some cases even better, or at least in a more satisfactory manner, than by calling on the village mechanic, sometimes several miles distant, and with the possibility of having to wait a considerable time before the work can be done.

Most wide-awake American farmers have these tools at hand which enable them to make simple repairs in wood, but did it ever occur to the reader that comparatively little wood now enters into the construction of farming tools, and that wood-working tools will not suffice to repair them

"ALL-STEEL" IMPLEMENT or machine of to-day? We have seen many wooden plow beams and handles broken and repairs made on the farm, while the typical Western plow of to-day is made almost entirely of steel, and they can be had without a particle of wood.

More than once have we broken the old wooden harrow on a snag and with a bit of timber, brace and bits and a few bolts, or with hatchet and nails, repaired the break. The harrow we now use is "all steel" except the draw-bar. Many a day have we used a cultivator made almost entirely of wood, and many new parts have we supplied in place of broken or worn-out ones. Today our cultivator has but eight pieces of wood at all told, while some have only half as many.

Thus we might proceed through nearly every line of modern farm machinery, including the steel harrower and binder, the iron mower, and others. And while metal machinery is, generally speaking,

LESS LIABLE to breakage than the old wooden implement of like construction, it is also much more complicated and delicate, and is by no means exempt from the disabilities that farm machinery is heir to, as can be abundantly proven by any country blacksmith who at certain seasons is kept busy early and late making all manner of repairs, from tightening a rivet to welding and readjusting a heavy steel bar or plating a broken casting.

As before stated, many simple jobs of repairing can be profitably done at home, but the farmer must change his tactics to meet the requirements of the changes that have been made in construction. It will not pay him to enter competition with the skilled village smith, neither does it pay him to run to town every time he wants a thread cut on a bolt, a hole drilled, a bent piece straightened, a broken one welded or plated, a horse's feet trimmed, his shoes pulled off, or a hundred other little jobs that with a set of blacksmith's tools such as is offered by the excellent AMERICAN FARMER can be done on the farm at a saving of time and money.

Having in use on our farm a kit of tools exactly like the one referred to, we

write from experience, and can say they are honestly made for business and are ready for honest business at any hour; just such an outfit as the bright farmer or farmer's boy will appreciate and find very convenient to have around.

Last Spring when starting a new cultivator we found the inside shovel shanks too long for the work in hand, with no extra holes by which they could be adjusted. Driving to the barn we slipped a half-inch bit in the drill and quickly boring other holes went back to work, having lost a half hour, whereas without the drill a half day would have been spoiled in going to the shop.

The morning father went out to mow he soon sent the pitman—one of those that fork near the lower end—



LIKE AN EXPERT.

to me with one prong or jaw broken off close to the main shaft. I cut a piece of iron a little longer than the broken jaw, shaped it, drilled a small hole in one end and a corresponding one in the pitman above the break, united the two with a tightly-fitting rivet, letting the free end of new piece with large hole come down to match the unbroken jaw and in a short time the machine was ready to finish the cutting in good shape. At another time the casting which holds the knife-head down was broken. As a new one could not be procured short of St. Joe, we went to work and in half an hour had the old one so well plated that it is good unto this day.

While we could give other similar examples, these will serve to illustrate how and why we found this set of tools

A PROFITABLE INVESTMENT in a single season's use. Very often a tool is permitted to do imperfect work through an entire season because of the trouble and inconvenience of taking it to the shop for repairs or adjustment, when with home facilities the fault would be speedily remedied.

Value of Corn and Cobs Ground Together for Stock Food.

The N. C. Agricultural Experiment Station has issued another bulletin (No. 97) on the digestibility of cattle foods. One of the experiments will be of much value to feeders.

Common dent corn meal was digested and also corn and cobs meal from the same lot of corn. The latter was found to have been digested better than was expected. The following is taken from the discussion in the bulletin: "Shelling a 100 pound sample of ear corn gave a yield of 81.5 pounds of kernels and 18.5 pounds of cobs.

"By feeding the cobs as corn-and-cob meal, 7.11 pounds of digestible dry matter was added to the 61.84 pounds digestible from the kernels. This is equivalent to saving 10.31 per cent. of the digestible food in 100 pounds of ear corn. Or, calculated on shelled corn, it adds 9.84 pounds of digestible food in the cobs to the 75.88 pounds in 100 pounds of corn meal. This is an addition of 12.96 per cent. to the digestible dry matter in the corn meal." Who would not try to save 10 per cent. of the corn crop as it is cured in the ear, or add one eighth to the value of the shelled corn meal? This is what these figures mean to make the corn crop go 13 per cent. further than if shelled and fed as meal, and throwing away the cobs.

The Maine Experiment Station has also shown that nearly 5 pounds more of the corn in a bushel is saved by feeding meal than by feeding whole corn. That is about one eleventh, or about enough to pay for grinding. It should cost no more to grind cobs with corn than for corn alone, and even less than to shell and grind. Then, the gain from cobs would be net, and the percentage shown by this digestion experiment would prove a handsome profit for the trouble.—F. E. EMERY, Agriculturist, N. C. Experiment Station.

The man who keeps on year after year raising good, salable animals—hogs, sheep, cattle and horses—regardless of fluctuations in the market, will get good prices oftener than he misses them.

SOMETHING SWEET.

Sorghum Sirup—How to Make a Superfine Article.

BY G. H. TURNER, BURGESS, MISS.

FOR OVER 20 YEARS we have been in the habit of raising a sufficiency of sorghum for home consumption. We have raised it for the sirup, of which we obtain from 100 to 200 gallons per acre; for the seed, of which we obtain *quantum sufficit* to keep our poultry up to the "laying point" the year round; and for the forage, with which we feed our cattle during the Winter, or as long as it lasts; even the "bagasse" is used to stop washes and fill gullies and in working the roads.

We regard a sorghum crop as the most profitable crop we raise, if not the most profitable crop that can be raised on the ordinary farm. For the past three weeks we have been actively engaged in sirup-making, have still six or eight weeks steady work ahead, and thinking a few "dots" on the "how" and the "why" and the "wherefore" of the *modus operandi* of sirup-making might help the amateur sirup-maker, as well as some of those who have a crop to "work-up," we throw out a few hints which we have learned from experience (and paid high for) on the same.

Our experience has been with portable mills exclusively. Too often we come across sorry samples of sirup and sorry sirup-makers—men who believe in "luck" instead of management, and with whom the making of a really first-class article of sirup is mere "chance" work, and is the exception rather than the rule. As there are 1,095 mealtimes in a year, at all of which sirup in some form is quite a "standard" article and takes its regular place, it is with feelings of dissatisfaction and oftentimes of mortification that a sorry, indifferent and decidedly inferior article usurps the place of that which might have been and should have been a strictly first-class article.

There is a difference (in regard to quality of sirup made) in (1) varieties of cane, and (2) land on which it is grown; black lands invariably making a dark sirup, while mulatto clays, buckshot and whitish or pipe clay soils make an article that is "hard to beat" in both taste and appearance, fully equal to the very best of refined sirup and vastly superior to any of the "glucose" sirups on the market. The making of a really good article of sirup (leaving out of "darkness" or "brightness" of product) rests not on "chance" or "peradventure" but wholly and solely on the degree of knowledge, ability and skill of the sirup-maker. Sorghum sirup (at its best) should be of a pale, rich, golden-yellow color, or at most a reddish-yellow; never darker than this. It should be thick enough to "rope" in warm

weather, and yet thin enough to run or to be drawn from the barrel in cold weather.

Never allow raw or partially-cooked juice to be mixed with the finished product in order to prevent "scorching" or even a "burn-up," or the resulting product will be a lumpy, jelly-like mass that is hardly fit for a hog to eat. All that is necessary to prevent having scorched, burned and consequently "dark" sirup with a hard, biting flavor, is a close attention to business, with plenty of juice behind you and more in the tank. Never allow juice, either in the mill, tank or evaporator, to "sour." Never grind out the juice long before it is evaporated, or it will sour (12 hours is amply sufficient time to turn a sweet juice to a sharp, sour "beer"), necessitating the addition of lime or soda in quantity sufficient to neutralize the acid.

In spite of all the care that may be exercised in straining the juice, there is still a sediment settles on the bottom of the evaporators. To prevent this adhering to and baking on the bottom of the pan, a head of juice is too easily kept up and an idle team and idle hands are the consequence. We mention this because it is so often the case that the mill and pan are out of proportion. The second essential is strict cleanliness throughout the entire sirup-making process. The juice should be strained at the mill, again strained at and before going on the evaporator, and (3) the sirup must be strained as it leaves the evaporator.

In making sirup we try to keep the three back sections (those next the chimney) as near half full as possible, or filled with the partially-cooked sirup *even with the lower bars*; the three front sections (those next to and over the fire) filled with green juice level with the upper or highest bars. The back section should be sirup, or nearly so, the third still less so, while the front half of the evaporator should be juice steadily undergoing the evaporating process, until, by the time a "run" is made it is at the right stage (i. e., highly colored) to be run into the back sections. The nearly-finished article should never be allowed to occupy more than two sections, or the probabilities are that some of the sirup will get scorched (unnecessarily) before it can be gotten off the pan. A good boil should be kept up the entire length of the pan (with the single exception of the first section, where cold juice is kept running out of the tank into the evaporator) from the beginning to the end of the evaporating process. Two good "skimmers" should be provided, and these should be kept busy in the three back sections. The skimmers, foam, etc., may be put in the front sections where it may be allowed to stay until it (together with the green scum of the front sections) solidifies or "cakes," when it should be skimmed off and thrown out. Thorough skimming is one of the essentials of good sirup, but the bulk of the skimming should be done in the back sections among the almost finished product.

THE MAIN REQUISITES

on the part of the sirup-maker are, a clear head, a quick eye, a deft hand, and last, but not least, he must know his business and have confidence in himself. Now for a few negatives. Never allow the pan to get too full (i. e., full from one end to the other.) Never be afraid of a "burn-up" (or the chances are that you will run off your sirup before it is sufficiently cooked), but keep plenty of juice behind you and the tank full as practicable. Never make a "run" until the sirup is fully "ripe," which may be easily told by the sirup "sinking" or "going down" on the pan and losing its tendency to boil over; (2) its "roping" when held aloft on the skimmer; and (3) by the peculiar "puttering," "puffing" noise made by the air bubbles as they "burst" or "ex-

ercised in straining the juice, there is still a sediment settles on the bottom of the evaporators. To prevent this adhering to and baking on the bottom of the pan, thereby giving to the sirup a "scorched" flavor, if not causing an actual "burn-up," the bottom of the pan should be repeatedly and thoroughly scraped with the edge of the skimmer, or rubbed with a wooden rake or scraper; more especially is this necessary just previous to and during a run. All vessels, receptacles and implements used in the holding of the juice and in the manufacture of the sirup should be kept

SCRUPULOUSLY CLEAN;

even the sirup-maker himself may wear fine clothes and a snow-white "staked and ridged" shirt without getting them badly soiled, and yet bestir himself sufficiently to turn out a superfine article of sirup. Never cut the cane until it is ripe, which may be known by the color of the cane and ripeness of the head, and let the period of time that elapses between the stripping, topping and cutting of the cane and its manufacture into sirup be as short as possible. Never permit the blades to become frost-bitten before they are stripped off; but if Jack Frost should steal on you unawares, then strip the blades off immediately, before the sun has time to wilt them. Frost-bitten cane and the sirup made from it is a little worse than none. In the making of an absolutely perfect article of sirup a great deal depends on (1) the degree of ripeness of the cane; (2) the kind of land on which it is grown; (3) variety of cane; (4) time it is allowed to stay on the pan; (5) the fireman; (6) and more than all, the sirup manufacturer.

Maple Sugar Growers Protest.

The licensed maple sugar producers in Vermont will unite to institute a suit against the United States Government for the unpaid bounties on the crops of 1894, the payment of which has been refused by the Secretary of the Treasury. The suit will be brought before the United States Court of Claims. The licensed sugar producers of Vermont for the season of 1894 numbered upward of 40,000. From March 1 to May 1, 1894, more than 4,500,000 pounds of maple sugar produced by licensed makers were received and underwent the polariscopic test at the Government laboratory. Fully 90 per cent. of the sugar produced this season under the McKinley act passed inspection above the 80 per cent. requirement, which made about 4,000,000 pounds entitled to receive the bounty of 1 1/2 cents per pound, the product of something like 3,500 makers. The amount of claims involved exceeds \$60,000.

This action is to be taken on the advice of ex-Senator George F. Edmunds, who says: "The refusal of the Secretary of the Treasury to pay the bounty to licensed producers on the crop of 1894, which was accepted and tested by the Government, cannot be justified in law or equity."

Corn Smut.

The smut of corn is not only injurious to the plant, but it is a deadly poison to animals that may eat it with the fodder or the diseased ears. This fungus is closely related to the ergot which infests various grains and grasses and the effect of which is to cause gangrene of the extremities, as the tail and feet, of animals. Some years ago the corn in Kansas being much infested with this parasite, the cattle fed in the stalk fields became largely affected by this disease, and reports to the effect that it was the epizootic aptha, which is one of the most destructive of all animal diseases, were current. Fortunately, it was only the eating of this poisonous fungus that produced the trouble among the cattle, but thousands of them died miserably from starvation and the distress occasioned by the entire loss of the feed.

It is quite possible to eradicate this pestilent fungus. If the diseased stalks and ears are gathered and burned, it will be only a question of time when the plant will be free from it. But, as with similar diseases of crops, it is necessary that all shall concern in this work, for one plant left will mature millions of seeds that are carried far and wide by the wind, and thus infect the soil again.

Care of the Meadows.

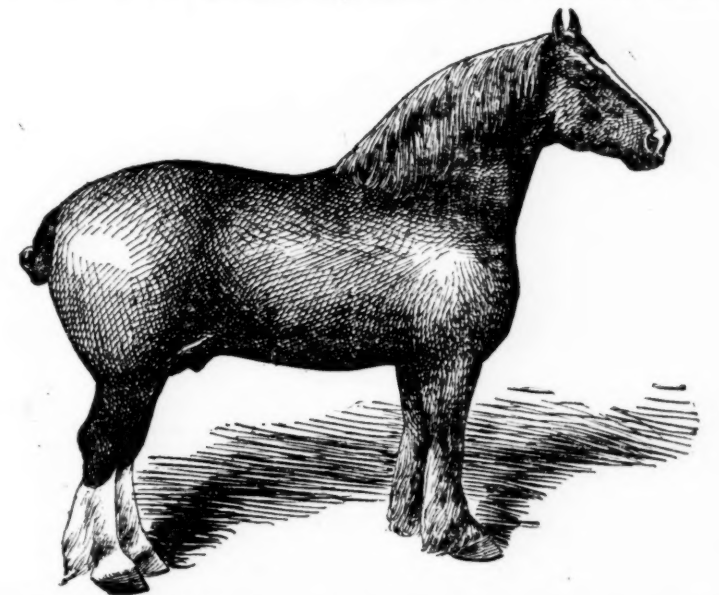
It will pay well to run the mower over the meadows and cut down the weeds before they seed. There are daisies, ragweed, goldenrod, and other flowers that are not in their proper place among the grass, and all now maturing seed for seven years' weeding in the future, as the proverb goes. These should be destroyed at once, and it will be a small job to do it.

"BELLOWS TO MEND."

Heavy or Broken-winded Horses.

EDITOR AMERICAN FARMER: This is immediately recognizable by the manner of breathing. The inspiration is performed in somewhat less than the natural time, and with an increased degree of labor; but the expiration has a peculiar difficulty accompanying it. It is accomplished by a double effort, in the first of which, as Mr. Blaine has well explained it, the "usual muscles operate, and in the other the auxiliary muscles, particularly the abdominal, are put on the stretch to complete the expulsion more perfectly; and that being done, the flank falls, or the abdominal

are foul feeders, because they devour almost everything that comes in their way, and thus impede the play of the lungs; but there is so much sympathy between the respiratory and digestive systems, that one cannot be much deranged without the other evidently suffering. Flatulence and a depraved appetite may be the consequence as well as the cause of broken-wind, and there is no pathological fact of more frequent occurrence than the coexistence of indigestion and flatulence with broken-wind. The narrow-chested horse is more subject to broken-wind than the broader and deeper-chested one, for there is not so much room for the lungs to expand when rapid progression requires the full discharge of their functions. Is broken-wind hereditary? We believe so. It may be referred to hereditary conformation—to a narrower chest and



WENONA ALBERT 3200, OWNED BY BURGESS BROS., WENONA, ILL.

muscles relax with a kind of jerk or spasm." This is attributable to an emphysematous state of the lungs. The inner membrane of the bronchial tubes swell and partly obstruct them. The powerful muscles of inspiration, however, overcome that obstruction and fill the cells of the lungs with air. But there are no such muscles to aid expiration to force the air out again. It is left chiefly to the elasticity of the parts sufficient when the bronchial tubes are in their ordinary unobstructed condition, but not sufficient when they are so obstructed as to require considerable force to press the air through them. Accordingly the air remains imprisoned in the cells, and every succeeding inspiration introduces more air into them until they are ruptured, or the dilated condition becomes permanent. Broken-wind is preceded or accompanied by cough—a cough perfectly characteristic, and by which horsemen would, in the dark, detect the existence of the disease. It is short—seemingly cut-short grunting, and followed by wheezing. When the animal is suddenly struck or threatened, there is a low grunt of the same nature as that of roaring, but not so loud.

Broken-wind is usually preceded by cough; the cough becomes chronic, leads to thick-wind, and then there is but a step to broken-wind. It is the consequence of the cough which accompanies catarrh and bronchitis often that attend following pneumonia; and of inflammation, and probably, thickening of the membrane of the bronchial, rather than of congestion of the air cells. A troublesome cough, and the various of long continuance, is the foundation of the disease, or indicates that irritable state of the bronchial membrane with which broken-wind is almost necessarily associated. Horses that are greedy feeders, or devour large quantities of slightly-nutritious food, or are worked with a stomach distended by this food, are very subject to broken-wind. More depends upon the management of the food and exercise than is generally supposed. The post horse, the coach horse and the racer are, comparatively, seldom broken-winded. They are fed at stated periods on nutritious food that lies in little compass, and their hours of feeding and of exertion are so arranged that they seldom work on a full stomach. The agricultural horse is too often fed on the very refuse of the farm, and his hours of work are frequently irregular; and the carriage horse, although fed on more nutritious food, is often summoned to work by his capricious master the moment his meal is devoured. A rapid gallop on a full stomach has often produced broken-wind; but generally, probably, there has been some gradual preparation for the result. There has been chronic cough, more than usually disturbed respiration after exercise, etc. Galloping after drinking has been censured as a cause of broken-wind, but it is not half so dangerous as galloping with a stomach distended with food.

It is said that broken-winded horses

a more fragile membrane, and predisposition to take on these inflammatory diseases which end in broken-wind; and the circular chest, which cannot enlarge its capacity when exertion requires it, must render both thick and broken-wind of more probable occurrence.

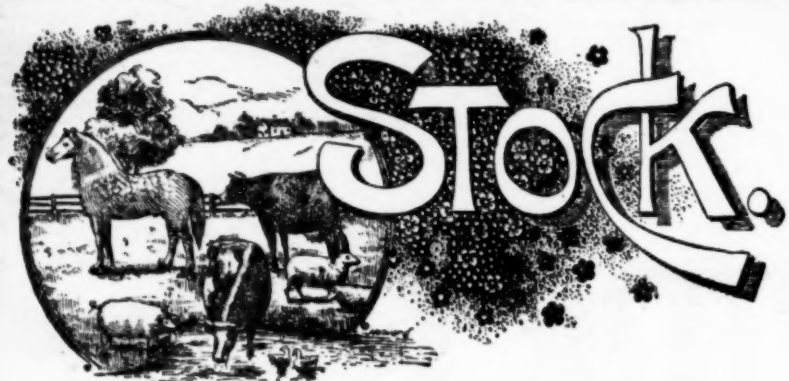
Is there any cure for broken-wind? None. No medical skill can repair the broken-down structure of the lungs. If, however, we cannot cure, we may in some degree palliate broken-wind; and, first of all, we must attend carefully to the feeding. The food should lie in little compass—plenty of oats and little hay, but no chaff. Chaff is particularly objectionable, from the rapidity with which it is devoured and the stomach distended. Water should be given in moderate quantities, but the horse should not be suffered to drink as much as he likes until the day's work is over. Green feed will always be serviceable. Carrots are particularly useful. They are readily digested, and appear to have a peculiarly beneficial effect on the respiratory system.—A FARMER, Columbia Co.

Stinking Smut.

The Michigan Experiment Station has given out a sure cure for stinking smut. The treatment consists in soaking the seed wheat affected with bunt, or stinking smut, in a saturated solution of lime for 24 hours and then sowing as soon as possible. The seed should be thoroughly cleaned through a fanning mill before treatment. To make the solution, take 10 pounds of unslacked lime for each barrel of solution and slake it, using just enough water to make a thick, pasty mass. Add enough water to this to make 32 gallons. The wheat should be poured in and allowed to stand 24 hours. On removal, it must be spread out thin to dry. This may be hastened by throwing on slaked lime and mixing. The wheat should not be allowed to heat, especially when wet. Use more wheat to the acre than usual, as the kernels may be swollen by the treatment.

Tobacco in South Carolina.

The people in South Carolina have only turned their attention to tobacco raising within the last 10 years. Six years ago not 100 pounds were raised in the country around Darlington. But the farmers there have gone into the business with intelligence and energy, and the results are very gratifying. King Cotton has been knocked out, and King Tobacco inaugurated in his stead. The annual sale or "break" began in Darlington, Sept. 1, and the first day 30,000 pounds were sold, and 60,000 pounds during the next three days. Mr. C. S. McCullough got the highest price, 50 cents a pound. Over 30,000 pounds were sold at an average of 12 1/2 cents a pound. The acreage will be largely increased the coming year, and much more attention given to raising the finer grades. There is no reason why South Carolina should not raise a large quantity of the fine wrappers which we now buy abroad.



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75TH YEAR.

THE AMERICAN FARMER.

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OUR NEW CLUB OFFERS.

We have arranged to club with the Weekly Witness of New York. Its price is \$1 a year when taken alone. The Witness is a 16 page weekly paper and among its contributors Rev. Josiah Strong, D. D.; Rev. John Hall, D. D.; L. L. D.; Rev. Robert S. MacArthur, D. D.; Rev. Theo. L. Cuyler, D. D.; Rev. M. C. Lockwood, D. D., of Cincinnati; current weekly sermon by Dr. Talmage; Sunday school lesson by Dr. George F. Pentecost, etc. It is one of the strongest and most popular family newspapers published.

The Witness and THE AMERICAN FARMER will be sent to any address for one year postpaid for the small sum of \$1.20 for both publications.

Sabbath Reading is a 16 page weekly paper, non-political, non-sectarian, no secular news. Determined not to know anything among you save Jesus Christ. Good, not good. Religious, not dull. Contains Sunday school Lesson; Christian Endeavor Topic; Sermons; Stories; Live Reports of City Missions. Sixteen pages filled with the best Christian thought of the age. Sabbath Reading alone costs 50 cents a year, but we have made an arrangement with its publishers so that we can send both it and THE AMERICAN FARMER, postpaid, to any address for one year for only 75 cents.

At Home and Abroad, the leading musical monthly publication of New York City, will be sent one year, with THE AMERICAN FARMER, for \$1.10, both papers postpaid. Every number of At Home and Abroad contains a collection of vocal and instrumental music that could not be bought separately in sheet form in the stores for less than 70 cents. Remember, that by our arrangement 12 numbers of this publication and THE AMERICAN FARMER for a year for only \$1.10.

These offers are open to all subscribers in connection with THE AMERICAN FARMER. Neither the Weekly Witness, Sabbath Reading, nor At Home and Abroad can be furnished by us without a subscription to THE AMERICAN FARMER for one year accompanying the order.

OUR CLUBBING LIST.

The American Farmer Will be Sent in Connection With Any Other Paper or Magazine.

We will send THE AMERICAN FARMER and any other paper or magazine in the country at a reduced rate for the two. The following is a partial list of the periodicals that we club with:

Name of Periodical. Regular Price. With the American Farmer, Price.

Penny Post. 100 1.25

Our Little Men and Women. 1.00 1.25

Washington's Magazine. 2.50 2.50

The National Tribune. 1.00 1.25

The Christian Worker. 1.00 1.25

The Young Sportsman. 3.00 3.00

The Illustrated News. 50 75

Almost a New York Daily.

That Democratic wonder, the New York Weekly World, has just changed its weekly into a twice-a-week paper, and you can now get the two papers a week for the same old price—\$1 a year.

Think of it! The news from New York right at your door fresh every three days—104 papers a year.

We have made arrangements by which we can furnish THE AMERICAN FARMER and the twice-a-week New York World all for only \$1.15 a year. Here is the opportunity to get your own local paper and the New York World twice every week at extraordinarily low rates.

THOUGH we raise about 2,000,000,000 bushels of corn in this country, and it is the principal source of our wealth, but three of the 68,000 post offices in the country recognize its importance by taking its name. These are: Corn, Blount Co., Tenn.; Corn, Mason Co., W. Va.; and Corn Creek, Trimble Co., Ky. There are three "Wheat" in Alabama, Tennessee, and Texas, respectively; three "Wheatfields" in 18 "Wheatlands." Oats are recognized in the names of six offices; rye in 12; grass in 30; milk and butter in not a single one, and cheese in but one—Cheeseville, Door Co., Wis.

SIGHTS AND SCENES OF THE WORLD.

Part 15. Number 15.

NUMBERS CHANGED EVERY ISSUE.

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PROSPECT OF FOREIGN COMPETITION

It is no longer a question of extending the sale of our grain abroad, as the Tariff Reform demagogues have been deluding us, but that of saving our home markets. This is our most serious problem.

The Tariff Bill took off the protection of 25 cents a bushel on wheat, and substituted a 20 per cent. ad valorem duty. As everybody knows, ad valorem duties are levied according to the cost at place of production. What this may be in regard to wheat remains to be demonstrated, but it will probably not be placed higher than 25 cents a bushel on Argentine and Russian wheat. Indeed, the heads of the big English syndicates which are operating the Argentine farms have always claimed that they could make large profit raising wheat at a shilling—24 cents—a bushel. This would make the duty on it, when imported under the present law, less than 5 cents a bushel, and it can therefore be landed at the seaboard cities of the United States for 30 cents a bushel, plus the transportation from Buenos Ayres. The transportation, let us say, will be from 15 to 25 cents a bushel, making the total cost of Argentine wheat delivered at New York, Boston, Philadelphia or Baltimore in the neighborhood of 50 cents a bushel.

The latest estimates are that Russia will have 140,000,000 bushels, and Argentine 80,000,000 bushels to sell, which together make perhaps 25,000,000 bushels more than Europe is likely to want. Therefore we may expect at any day an offering of wheat from those countries in our seaboard exchanges, which will make a break in the prices in our home market.

Such is the pass to which blatant demagogism has brought us. Our home wool market is ruined, and now our grain market is seriously threatened.

THE OUTLOOK FOR WHEAT.

It must be admitted that the prospect for an enhanced price for wheat is not encouraging.

The most important event of each year is the annual Grain Congress at Vienna. At the one held last August the Hungarian Minister of Agriculture carefully prepared tables of the wheat crop of the world. These footed up a total of 2,476,000,000 bushels, or very nearly 2,000,000,000 bushels more than last year. The estimates for our crop was 406,000,000, whereas it is now pretty certain that this will reach over 500,000,000 bushels, so that the crop of the world will be at least 300,000,000 bushels more than last year.

The crops of all the wheat-importing countries are so much better than last year that they will not need so much wheat by 15,000,000 bushels. Last year we sold abroad 164,000,000 bushels. This year we shall have, unless the use of wheat for stock takes large dimensions, about 175,000,000 bushels to export.

Now comes the question of competition with our great rivals—Russia and the Argentine Confederation. As to the Russian crop nothing very definite can be known, as agricultural statistics are in a very chaotic condition in the Czar's empire. All that we know is that the crop has been good, and, like last year, grain will keep coming out of the Russian ports in seemingly exhaustless quantities.

From the Argentine Confederation the outlook is equally unfavorable. The 38 cents a bushel which the growers have been receiving is "big money" to them and has encouraged them to put in much more land. A correspondent from Buenos Ayres to the London Times writes:

"In spite of the low prices now ruling for wheat, a large increased area of land is being broken up along the railways in the provinces of Buenos Ayres, Santa Fe, and Entre Rios. Should the next harvest be a favorable one, it is estimated that the amount available for export will not fall far short of 2,500,000 tons. This will, of course, give plenty of freight for the railways traversing the grain districts, and, if other circumstances are favorable, may mean the beginning of better days for many of the countrymen."

"This increase in the wheat-growing area of the Argentine is somewhat curious when the starvation prices of to-day are considered. But the production is chiefly the work of Italians who have emigrated with their families of late years from Italy. These people take up a piece of land and do all the manual labor themselves; they grow what they need, and are content with very little; they spend nothing beyond what is absolutely necessary in the matter of clothes, and nothing in luxuries. Hence, whatever return they get from their crops is a pure gain for them, and is available to pay the installments due on the land they have selected. In many cases the land owner gives the land and receives 12 per cent. of the gross product of the crops as his rent. Under these circumstances the cost of the production

of wheat is extremely small and compares favorably with cost of cultivation in other countries."

It is estimated that the Argentinians may throw into the markets as much as 100,000,000 bushels of wheat this year.

THE PRESENT SITUATION.

Some years ago a President of the United States said: "It is a condition not a theory which confronts us." This is what confronts the farmers of the United States to-day. Of theories, they have had more than a sufficiency in the past few years. Theories on money, on tariff, on taxation, have been dinned into their ears incessantly, and usually by men whose study of these questions and mental capacity for understanding them were ridiculously disproportionate to the amount that they talked and wrote. The rule has been that the less a man knew about money, tariff, and taxation, the more glibly he talked of them, and the more certain he was that his ill-digested fermentations were gospel truths.

We have all had the affliction of seeing these theories attempted to be carried into practice. There could have been no more damaging demonstration of the folly of following the lead of these quacks than the country has had. The question before the farmers is whether they will allow these mountebanks to continue their ruinous rule. They have absolutely failed to accomplish a single one of the good results that they have been so loudly promising their dupes; most of the promises they have forgotten or ignored. On the other hand, they have done the country, and particularly the farmers, an incalculable injury. The worst calamity-however could not have predicted more misfortune than they have brought about.

The time for applying the remedy and ending this misrule is now at hand. Next month the people are to select the men who are to rule the country for two years. Let the farmers make sure that these shall be men who have an intelligent comprehension of the needs of the country, of the policy which will restore general prosperity, and which will adequately protect the farmer's interests, and insure to him a fair return for his labor, care, and skill. Let us every where have the demagogues, the visionaries, the economic quacks sent to the rear, and safe, practical men sent to Congress in their places. We want no more men who will be chasing the pot of gold at the foot of the rainbow of "foreign trade," but men who will see that the best market in the world—our own—is carefully preserved to our own people, and that the \$300,000,000 worth of farm products which we buy abroad every year are raised on our own soil.

Let us have an era of business common sense succeed this nightmare of demagogic folly and incompetence.

THE 17th Ohio Congressional District is composed of the Counties of Licking, Holmes, Coshocton, Tuscarawas and Wayne, and raises a large share of the wool produced in Ohio. It has been represented by J. A. D. Richards, who was elected by a majority of over 6,000. But he forgot the interest of his constituents so far as to vote for free wool. The results have simply been ruinous. Three years ago the farmers—who raise some of the finest merinos in the world—were getting from \$3 to \$4 a head for their sheep, taking the run of the flock. Now they are glad to take from 65 cents to \$1 for the finest of the lot. At a recent sale at Pataaskala a large number were sold at \$4.50 a dozen. There were a year ago 40,000 sheep in the district, worth \$1,500,000. Now it would be a rash man who would give \$500,000 for the lot, and Mr. Richards is felt to have cost his constituents \$1,000,000 in this item alone. Consequently he is standing by his political grave, and the interment will take place early in November.

An encouraging experiment has been tried in working convicts upon the roads in the vicinity of Charlotte, N. C. A Good Roads Convention was recently held in that city, and the members, upon inspection, found the roads that had been made by convict labor were equal to the best made anywhere. The entire cost of guarding, feeding, lodging, clothing, etc., of the convicts, and medical attendance, averaged 21 cents a day, making the expense of employing 50 convicts for 30 days only \$315.

The English farmers are feeling the competition of Russia and Argentine very severely. They are only getting 55 cents a bushel for wheat now, when they thought themselves ruined last year, with wheat selling at 75 cents.

PERSONAL.

Franklin Lawton died at his home in New Rochelle, N. Y., Aug. 7. He gained some fame and a moderate fortune by introducing the blackberry which bears his name.

Until the appearance of the Lawton blackberry, also called the New Rochelle, and the Secor Mammoth, the market was supplied from the woods by the various wild varieties of the *Rubus villosus*, or high blackberry, so common all over the country, and, in fact, the origin of nearly every variety at present under cultivation.

About 1840 Lewis A. Secor found growing by the roadside near his home at New Rochelle a blackberry with very large oval fruit, of an intensely black color and very juicy. Its flavor was rich and sweet, and it was less seedily than any he knew of. He dug up some of the bushes and transplanted them into his garden as an experiment, and found that cultivation greatly improved the fruit. For nine years Mr. Secor grew his berries, but could not get anyone to accept a plant even as a gift. At last Mr. Lawton, at that time a young lawyer of New Rochelle, took a lot of the plants and berries and exhibited them in this city, where he created a sensation with them and made a small fortune out of the sale of the plants.

The biggest farmer in the South is Col. Jas. A. Smith, of Southemba, Oglethorpe Co., Ga. He has 23,000 acres, on which he employs 200 convicts and 500 free laborers, runs 300 plows, and raises 3,500 bales of cotton, 30,000 bushels of corn, 500 head of cattle and 500 hogs. He sows a carload of cattle every week, milks 150 cows and makes 75 pounds of butter a day. He has a guano factory, cottonseed-oil mill, and a grist mill on his place. He was an overseer before the war, and began after the war with a "three-bore farm."

Aug. 9 Mr. Lester, of Salt Creek, Ill., went out to the barn to shoot a crow. The animal kicked over a tank of gasoline, which caught fire, and burned up, among other things, Lester's vest, which was hanging near, and contained \$122 in money, \$350 in notes and a valuable watch.

Mr. C. S. Chapman, of the People's Bank, New York, N. Y., has received from the U. S. Department of Agriculture a diploma for the best fleece of Merino wool. Mr. Chapman has been engaged for 25 years in developing this style of wool and is one of the largest wool growers in the country. Although a Presbyterian, he does not allow himself to talk about the present tariff tinkers for fear of making a break and saying something not authorized in the Westminster confession of faith.

Trustees of the University of Illinois accepted the resignation of Professor Morrow, of the Agricultural Department.

NEW PUBLICATIONS.

ANNALS OF HORTICULTURE. By Prof. L. H. Bailey, Professor of Horticulture, Cornell University. Published by Orange Judd Co., New York. Price \$1.

This most recent issue of this indispensable year-book is conspicuous for its full history of horticulture at the Chicago World's Fair. The author spent most of the Summer at Chicago for the express purpose of collecting facts for this volume. It is the only complete history of horticulture at the Columbian Exposition. Review of the World's Fair Horticultural Exhibits, with names of all Plants and Exhibitors; the only correct catalog of the World's Columbian Plants. The volume also contains a full discussion of the yields and prices of fruits, vegetables, and all other horticultural crops in North America during the year. There is a History of the Orange Trade, and accounts of the efforts to introduce American fruits into European markets. The volume is a full set of statistics of the horticultural imports and exports of the year. Floriculture interests are well represented. There is a full account, with words of the World's Fair Chrysanthemum Show.

RELATION OF TAXATION TO MONOPOLIES. By J. W. McMillan. Published by the American Academy of Political and Social Science, Philadelphia. Price 15 cents.

A very thoughtful essay upon an important issue. The QUEEN OF ECTADORE. By R. M. Manley. Published by the H. W. Hagenman Publishing Co., 114 Fifth Avenue, New York. Price 50 cents.

The plot is highly original and sensational, but the author tells a startling story in so quiet a manner that he escapes the reproach of too great strain after effect. The tale contains some love-making, some gentle satire and many dramatic situations.

NOTES.

The Overland Monthly for September has a magnificent story by H. M. Hart (Hart) entitled "The Story of the Indian Agency." This is accompanied by a full bill of fare of other good things, serious and instructive, exciting, entertaining, bright, lively and amusing. Published at San Francisco, Cal. Price 25 cents.

W. D. Griffing, proprietor of the Pomona Nurseries, Maclean, Fla., has gotten out a new and most valuable descriptive catalog. It has one great feature in an absolutely correct nomenclature, something that other catalogs have been woefully deficient in. It has also full description of the best method of transplanting and caring for trees.

A B C in Cheese-Making is a short manual for farm cheese-makers in cheddar, gouda, Danish cheese (skm cheese), brie, French cheese, and other varieties, and contains, besides, such as cottage, "schmierke," "pultost" and "nietmeier" and "why cheese" (Norwegian). By J. H. Monrad, Winnetka, Ill. Price 50 cents.

The famous musical composers have taken a hint from their literary brethren, and are securing an advance magazine publication for their compositions just as the authors publish their novels in serial form. The *Lady's Home Journal*, which was practically the first magazine to offer this outlet to composers of music, finds all the musical men rallying to it. Sir Arthur Sullivan and Augustus St. John have just been the first to publish in that magazine. Patti's veteran conductor, Arriti, has given his new waltz to the *Journal*, while Reginald de Koven's new song goes also to the same periodical. Strauss has sent his new waltz to the editor, Sousa a new march, and Masvigne, of "Cavalleria Rusticana" fame, is writing a piano score.

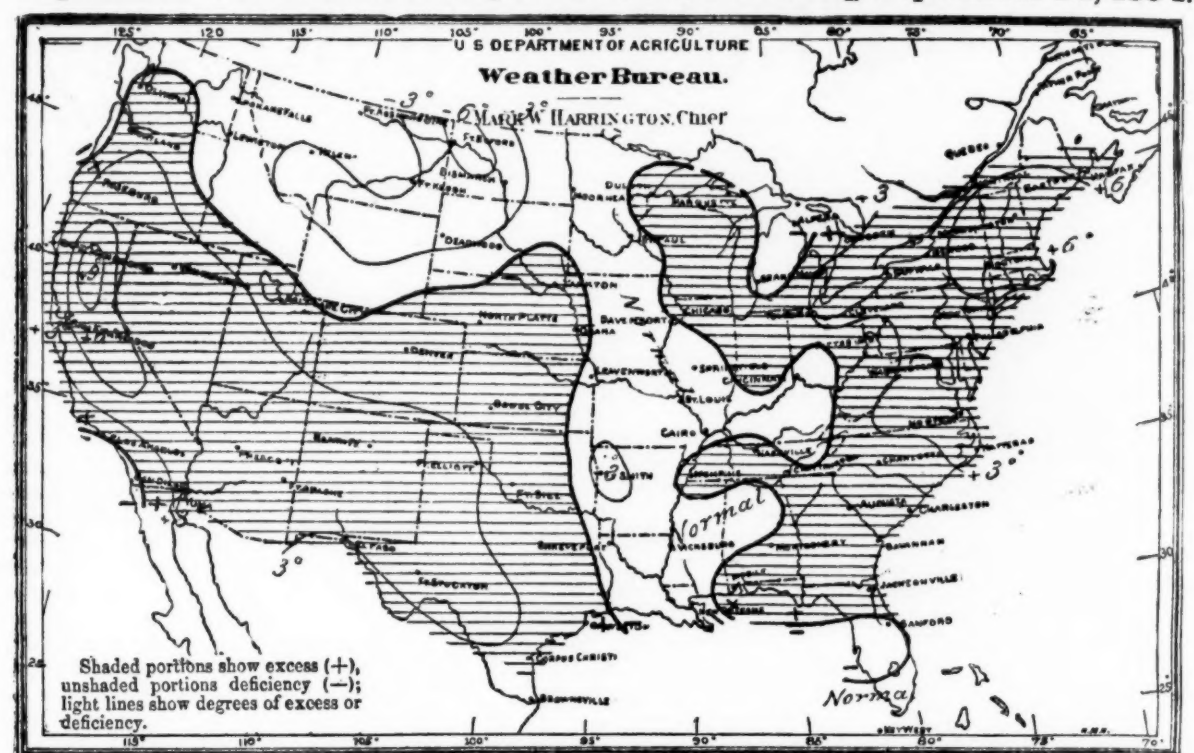
The fourth number of *Uncle Sam* has telling colored cartoons on the political, social and religious situation. It has many bright pictures and bright, witty reading matter. It is intensely American, and its motto is "American Institutions Must and Shall be Preserved." Published in the Schiller Building, Chicago. Price 10 cents.

A new journalistic venture has appeared in San Francisco, which seems to have abundant merit to command success. It is entitled the *Intellectual Pacific* and states its object to be "An exposition of the material and intellectual resources of the Pacific Coast." It is gotten up in the finest style, with some paper, and an abundance of the highest grade of illustrations. Monthly; \$1 a year.

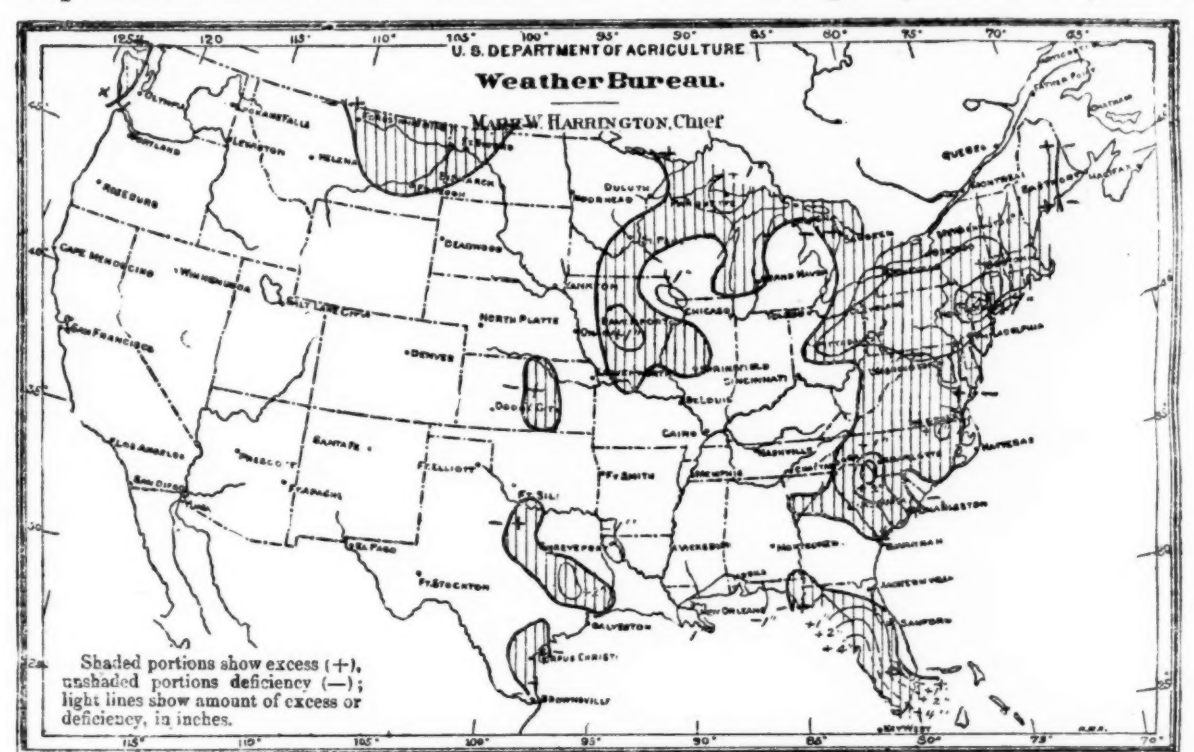
THE best answer to the absurd statements of the free wool liars, is given by Bradstreet's weekly review of business:

London wool sales have proved disappointing to those who predicted or anticipated heavy purchases for the American market and rapid advance in prices. On this side quotations are off one cent, fleeces particularly being weak.

Departures from Normal Temperature, Week Ending September 24, 1894.



Departure from Normal Rainfall for Week Ending September 24, 1894.



WASHINGTON, D. C., Sept. 25, 1894.

TEMPERATURE.

Average temperature conditions prevailed during the week ending September 24 in southern Florida, throughout the Mississippi Valley, and in the lower portions of the Ohio and Missouri valleys. On the Atlantic coast north of Florida, and over the greater part of the Lake region the week was warmer than usual, the excess in temperature amounting to more than 3° per day northward of the Carolinas, and exceeding 6° in New England.

The week was also warmer than usual from Nebraska, Kansas, and Texas, westward to the Pacific, except on the immediate coasts of southern California, northern Oregon, and Washington, where it was slightly cooler than usual. From western Texas northward to southern Oregon the average daily excess amounted to more than 3° per day, and in interior portions central and northern California ranged from 6° to 10°.

Over the extreme northern districts from Minnesota, westward to eastern Washington, the week was cooler than usual, the deficiency in temperature exceeding 3° in Montana, Wyoming, and the Dakotas, a maximum deficiency of 6° occurring in western North Dakota.

Some unusually high temperatures occurred during the week along the southwestern border from western Texas to California, stations in Arizona and southern California, reporting 100° or more, while freezing temperatures occurred in Montana, the Dakotas, and northern Minnesota.

PRECIPITATION.

More than the usual amount of rain fell during the week in Florida and from the Carolinas northward to New England. There was also more than the average rainfall over portions of the Lake region and upper Mississippi Valley, eastern Montana, and over limited areas in Arkansas, Kansas, and Texas.

Abundant rains have fallen during the week generally throughout the Atlantic Coast States, and in portions of Georgia, the Carolinas, Pennsylvania, northern New Jersey, and southeastern New York the rains have been very heavy, nearly seven inches of rainfall being reported from northern New Jersey. Unusually heavy rains also occurred in portions of Texas and Iowa.

In the States of the lower Ohio and lower Mississippi and upper Missouri valleys and throughout the Rocky Mountain and plateau regions less than the usual amount of rain has fallen.

No rain fell during the week in Nebraska, western Kansas, and throughout the region from Colorado, Wyoming, and Idaho, northward to the Pacific coast.

GENERAL REMARKS.

Upon the whole the week has been very favorable. Abundant rains have relieved drought conditions in all sections except in Nebraska and portions of Kansas, Minnesota, and the Dakotas. Fall plowing and seeding have progressed rapidly, and much of the early-sown winter wheat is up and looking well.

Corn cutting has been pushed vigorously, and in Minnesota husking has begun. Indiana and Wisconsin report that from is turning out better than was ex-

pected. In Indiana, and for the most part in Illinois, the crop is beyond danger from frost.

The week has been very favorable for cotton picking, which has been pushed rapidly. South Carolina reports that nearly half of the crop in that State has been gathered.

On the Pacific coast the weather was especially favorable for securing crops and drying fruit. In Oregon the grain crop has been secured and harvesting is nearly completed in Washington. In California the weather was especially fine for gathering raisins, grapes, and beans, all other crops having been secured.

SPECIAL TELEGRAPHIC REPORTS.

New England.—Wm. with much sunshine; moderate rain in north, and from four to five inches in southwest; late forage, garden crops, and grass-lands improved; winter forage; harvesting well along; apples variable, but generally good crop of fine quality.

New York.—Warm, heavy rains in all sections; soil in fine condition; pastures, meadows, and garden crops coming up nicely; corn and wheat growing well; late potatoes still improving.

New Jersey.—Heavy rains first of week retarded all farm work; some damage to late field crops by flooding reports; last half of week favorable for plowing and seeding on high ground.

Pennsylvania.—Conditions favorable for completion of seeding; late crops of late crops; fall work well advanced; pastures much improved and setting in good condition; corn and wheat crops well along; crop of good color; buckwheat thrashing delayed by wet weather; tomato crop larger than anticipated.

Virginia.—Rainfall ranged from one-half inch in the northwest to three inches in the valley and east-middle sections; drought effectively broken in valley and east of the Blue Ridge Mountains, but still dry from Roanoke westward; tobacco cutting and fallowing and seeding rapidly progressing.

North Carolina.—Very favorable week, with temperature and sunshine above normal, and heavy rains putting land in good condition for fall plowing; cotton half open; corn being housed and peanut digging about to begin.

South Carolina.—The rains of the week stained cotton somewhat and checked its rapid opening, but picking is progressing rapidly, with nearly half the crop gathered; rice harvest continues, with fair yield; minor crops abundant.

Georgia.—Temperatures normal, with no rain since 15th; crop conditions good, especially that of corn and sorghum; rice cutting has begun; complaint of beetles in cotton are general.

Florida.—Temperature normal; excessive rains in southern portion but rainfall deficient in northern and western sections; good work done in plowing and setting in good condition; cotton will not make a full crop.

Alabama.—Dry and seasonable week, with warm, sunny days; cotton opening rapidly and much of it picked; corn coming up nicely; late crops coming up nicely; harvesting, peas, potatoes, and some peanuts with good yield.

Mississippi.—Temperatures fairly well, but a good deal of clear weather has produced a decided improvement in crop prospects; cotton opening rapidly, and harvesting being pushed; corn filled in a damaged condition; hay making has progressed well; small crop of rice; beans and cotton opening rapidly; picking being rushed and commencing to mature.

Texas.—Precipitation below normal, except in a few localities, where it has been above; the weather has been generally favorable for the cotton crop, and picking has progressed rapidly, except in some sections, where labor is scarce; full forage crop good.

Arkansas.—Weather more favorable and improvement noted in condition of cotton; not so much rust, rot, and shedding reported, and late crops are not generally so badly opening more rapidly and picking being reported; corn being gathered and fall plowing progressing rapidly; minor crops good.

West Virginia.—Conditions favorable for crops and farming operations; several good showers; some buckwheat advanced; grass improved and gardens holding out fairly well.

Ohio.—Drought thoroughly relieved, and fall pastures and early sown wheat growing fast; wheat springing and seeding and corn cutting well advanced; tobacco mostly cut; turnips and late garden truck growing rapidly.

Michigan.—Temperature and sunshine above and rainfall below normal; favorable weather conditions have promoted farm work and allowed plowing, corn cutting, and wheat seeding to be pushed forward rapidly; late potatoes doing well; small soil excess; corn on plowing; considerable injury to gardens from frost; potato digging and corn husking general.

Iowa.—Corn cutting has progressed rapidly; more fall plowing and seeding done than in previous years; early seeded grain and pastures growing nicely.

Nebraska.—Drought continues in west, central and south; fall never better; seeding well advanced; ground in fine condition.

Minnesota.—Drought continues in west, central and south; ground in fine condition; late potatoes doing well; small soil excess; corn on plowing; considerable injury to gardens from frost; potato digging and corn husking general.

Wisconsin.—Weather during past week unfavorable to agricultural interests; severe frosts delayed vines and vegetables, and rains and snow in southern sections delayed harvesting and threshing; yet, in general, conditions were very good; fall pastures are good.

Montana.—Cool and cloudy, with a deficiency in precipitation; heavy frosts in nearly every section, but as all crops are matured the damage was very slight; fall pastures are good.

Wyoming.—Normal temperatures prevailing, with no precipitation; seasons fall weather, and the soil is in good condition for fall plowing.

Idaho.—Weather during past week unfavorable to agricultural interests; severe frosts delayed vines and vegetables, and rains and snow in southern sections delayed harvesting and threshing; yet, in general, conditions were very good; fall pastures are good.

Utah.—Week of fine weather without rain, with warm days and cool nights; late crops doing well; good for fruit drying, thrashing, and plowing.

Washington.—Cool, with small rainfall; excellent weather for harvesting, which is now over in many counties, with good grain crop; but poor crop in eastern portion.

Oregon.—Grain crop secured and fall plowing completed; large quantities of grain are being threshed; potatoes are doing well; potatoes and potato harvest commenced; potato seeding light.

California.—All crops about secured; good crop, except beans and raisins; grain and vegetables are doing well; late crops are doing well; good for fruit drying, thrashing, and plowing.

Arizona.—Late crops doing well; plenty of water for irrigation; maximum sunshine to date.

Colorado.—High temperature early in week beneficial to crops; but only crop not harvested; no serious damage from recent frosts; grain in good condition for fall plowing.

New Mexico.—Warm, dry weather very favorable for ripening and harvesting crops, which are nearly completed; grain and potatoes are doing well; potatoes and potato harvest commenced; potato seeding light.

Texas.—All crops about secured; good crop, except beans and raisins; grain and vegetables are doing well; late crops are doing well; good for fruit drying, thrashing, and plowing.

Get After the Candidates. EDITOR AMERICAN FARMER: Now would be a good time to see how the candidates for Congress stand on the rural free mail delivery question. This will be about the only thing that they can do as they please with, without regard to party or platform. Let us get all the candidates to promise to help, or at least not oppose, some kind of a rural free mail delivery bill, and then it will not matter who is elected; we will be sure of having some kind of a bill passed.—W. M. CORBIN, Sioux City, Iowa.

The Boston Journal of Commerce of last Saturday says: The failure of the London sales to advance prices materially has frightened dealers here and prices on American wools have been further. Even one-quarter and three-quarters the highest price paid last week. Piled wools are accumulating and the large stock

THE GARDEN.

Pickings.

Spinach is a profitable crop. Cut off asparagus tops before the seed matures, or you will have a lot of seedlings on hand.

The small-fruit plots, such as blackberries, raspberries, currants, etc., should be thoroughly cleaned out and fertilized in the fall.

Have no till land, but let crops follow one another in quick succession. Delay in this matter will not only result in weeds, but in loss and dissatisfaction.

There is a disadvantage in late planting of strawberries. They are liable to be injured by alternate thawing and freezing, because of not being sufficiently rooted.

Alternately the drouth, blight, and bugs seem to play havoc with late potatoes, making them a very uncertain crop in many regions. Fertilizers are untrustworthy; stable manure causes scab.

Those who have sown their turnips in drills will get the best results. Cultivate them as long as the tops will permit. The old neglectful way will not do. Air and moisture are essential even to the hardy turnip.

In the fall is a good time to set out beets, radishes and asparagus plants, and there ought to be a good bed of both on every farm and in every garden, and well established and given good treatment they will last for years.

There is a field for a cross-bred race of geese. Valuable introductions are Red Jacket and Columbus. Mildew may be killed by growing on high soil, and in rows running north and south. They should be well exposed to the sun.

Always plow garden land in the fall and have no green perennial plants in winter, but intended to be planted with cabbage, tomatoes, or other plants which will not be damaged. After that is done, plowing and close hunting seem to be the only way to eradicate them.

Many varieties of squashes may be preserved a long time after harvesting, with proper care. When first gathered, they should be stored in a cool, dry place. As the weather becomes colder, they should be removed to a room where the temperature is several degrees above freezing. Among the best squashes for preserving are the Hubbard and Turban.

There are three ways in which the truck farmer may dispose of his products. He may sell his produce direct to the grower; he may build up a regular route, or he may have a stand in some market where his customers can always find him. Although the profits are not so great, the first method is most practical with the majority of farmers, as it requires less time, and the exposure to the weather is not so great.

If melon leaves are found to have dry brown spots and a dead appearance, the plant is afflicted with a fungus disease of the genus *Phyllosticta*, which reproduces by means of spores. It cannot be cured after having once started, but its attacks may be prevented by keeping the vines in a frost-proof condition by means of liberal manuring and frequent cultivation. Preventive spraying with Bordeaux mixtures as for other fungi is also recommended.

A planter of Geneva, N. Y., last winter experimented in forcing beans, with the following result: About 14,000 string beans were shipped from eight successive sowings in pots. The first sowing was made Sept. 29, the beans being shipped Nov. 2; the last sowing was on Feb. 3, and the beans shipped March 6. Eight-inch pots were used and six beans planted in each; 50 pots were sown each time. The best yellow bean was Flageolet; the best green, Early Warwick.

A simple plan has been given for preventing cabbage from bursting. It is to cut the heads which show signs of bursting and starting the roots by pulling the cabbage partially out of the ground, leaving only about the roots and a few leaves. Pulling is about the best plan; that is, putting both hands under the head, pull until many of the roots are loosened and then the plant is pulled over to one side. This treatment effectively stops the bursting, and not only that, but the cabbage continues to grow freely.

Early tomatoes make a handsome profit. Start early-maturing plants in February, in hot-bed or window-box. Transplant to make stocky plants, and set as early as possible in soil made rich by the year before. Apply nitrate of soda, cultivate frequently; staking will not be necessary.

In raising large fields of tomatoes for market, staking would no doubt be too much labor, but for the home garden the trouble is not great and the plan is very satisfactory. Walking among the plants is more convenient, and the fruit is kept clean and the garden has an artistic appearance, so that it is a pleasure to look on it or pass through it.

Lime Will Injure Stable Manure. Please let me know if lime is injurious to manure that contains stable manure or cotton seed and is stable and for manure injured by being exposed to sun and air for several days. It is practiced by some farmers before they use their manure.—J. B. G., Goldsboro, N. C.

According to H. B. Battle, Director, N. C. Experiment Station. The addition of lime to stable manure is not advisable, because it will tend to decompose it and liberate the ammonia; it will also have this effect upon cotton seed. It would be best not to allow the stable manure to be exposed before applying to the land.

Thayer's Berry Bulletin, No. 19, for October, 1894.

If you would grow berries successfully in a Northern climate you must give them protection in winter.

Winter protection should be practiced in all localities where the temperature reaches zero or below.

Even with the most hardy plants, and in localities where they show no injury, the vitality is often impaired and the succeeding crop very much reduced.

With high cultivation a large and tender growth is produced, hence the greater necessity for maintaining as uniform a temperature as possible throughout the winter and early spring. There is safety only in protection.

The first warm days in March are especially trying. A protection of earth or other mulch carries them safely through the severest winter and beyond this critical period.

The best winter protection for blackberries, raspberries and grapes is obtained by laying them down and covering lightly with earth.

If plants have been mulched in summer with green clover, clean straw, or coarse manure, as they should be, use the mulching first, then cover lightly with dirt.

The process of laying plants flat on the ground before covering is an important one, and is easily acquired with a little practice.

If rows run north and south, commence at the north end, remove the dirt about four inches deep from the north side of the hill, gather the bushes in close form, with well protected hands and pull gently towards the north. At the same time a second man places his foot firmly on the south side of the hill and presses hard towards the north, bending the plants in the root until nearly flat on the ground.

If ground is hard or bushes old, the first man may use a wide two-tine fork to push the bushes carefully over, and the second man a potato fork instead of the foot, inserting the same deeply close to south side of hill, bending in the root as before, until nearly flat on the ground.

The first man then holds the bush down until properly covered; the top of succeeding hill resting close to side of preceding hill, making a continuous covered row. In spring remove the dirt carefully with a fork, and slowly raise the bush.

Two men should lay down and cover from one-quarter to one-half acre per day. Canes are more flexible and less liable to break if this work is done soon after frost, but may be done any time before ground is frozen.

With hardy varieties and in mild winters sufficient protection may be had by covering the tips only. Grapes being more flexible are laid down without removal of dirt near the vine.

There is no more important work on the fruit farm or garden than winter protection, and there is no work more generally neglected.

Let it be done early and thoroughly. —M. A. THAYER, Sparta, Wis.

Fall Planting.

In the planting of raspberries and blackberries, J. S. Meehan says he would wish no better time than early fall. In an exchange he gives the following manner of treating raspberries:

"The situation selected for raspberries should not be a damp one, or the plants will continue growing late in the season, and will fail to ripen their canes. For the same reason I do not care to have the soil too rich. The plants are wanted to make a fair growth and to finish it about the close of summer, then, when winter comes, a sturdy, well-ripened cane results, which will not rot when buried up. I say buried up, because even in Pennsylvania it is found much the better way to bend the canes over to the ground and cover them with earth as winter comes, there to remain until the spring days come. For the same reason it is hardly worth while naming some as being harder than others, for one and all of them are better buried up. We look on Cuthbert as a particularly good and hardy sort here, yet one of the handsomest plantations of raspberries I ever saw was of this kind which had been buried up over winter.

"I would set the plants toward the close of September or early in October, getting all the root possible, setting them three to four feet apart each way, and cutting them down to about six inches above the ground. Tramp the earth in firmly about them, as the closer the contact of soil and root the better the prospect of success. Before winter comes mulch about the plants heavily with manure. Apply enough to keep frost from the roots if you can, as to keep the roots free from frost helps wonderfully towards success. If manure cannot be had, place an extra quantity of earth about them, to be taken away in the spring, keeping in mind that it is placed there only to keep the frost out. Where snows are always to be looked for all winter, extra precautions will not be so important."

Cutting Hay in the Mississippi. A harvesting machine run along the bed of the Mississippi River near its center is the queer scene that was witnessed several miles above Alton, Ill., Sept. 4. The unusually low state of the river this year has exposed several hundred acres of sandbars lightly covered with alluvial soil about the little island of Eagle's Nest, and upon these has grown a crop of wild millet which stands four feet high, and so thick as to be almost impenetrable. It is clean, and would make a fairly good quality of hay. An enterprising Missouri planter noticed this, and conveyed a mowing machine and a team of horses to the island, and secured a large crop.

TUBERCULOSIS IN CATTLE.

Suggestions for the Diagnosis and Treatment of the Disease.

The results of investigations dealing with the serious question of tuberculosis in cattle, from both the economical and sanitary standpoints, are embodied in an important report of the Agricultural Department prepared by Theobald Smith, Chief of the Animal Pathology Division. It reviews the examinations, discusses the history and character of tuberculosis, and presents many valuable suggestions for the diagnosis and prevention of the disease. The report is in substance as follows:

"In making tests the temperature of the inspected animal should be taken every two hours, at least six or seven times, before making the injections, as without a knowledge of the variations before the injections it is frequently impossible to estimate correctly the value of the elevations of temperature after the injections. The variation in the temperature of an animal during the course of the day is frequently so great that if the variation is not determined, and the temperature is taken only once before a tuberculin injection, it is merely a matter of chance if a high temperature, natural to the animal and independent of the action of the tuberculin injection, is not erroneously taken for a reaction. The most convenient place for an injection is the side of the neck, where the skin is thin, and a large, strong needle gives much more satisfaction than a small, fine one. Seven or eight hours after the injection the temperature should again be taken, and then on every two hours, until a decided reaction, continuous during several hours, has occurred, or until 18 or 20 hours have passed since the time of the injection."

The report suggests that a careful inspection of all dairy herds, with the object of detecting and removing all advanced cases of tuberculosis, especially of cows with diseased udders, would probably exclude the sale of most infected milk. Observations show that occasionally the presumably mixed milk of dairies may contain enough tubercle bacilli to prove fatal to guinea pigs in two months.

TO ATTACK TUBERCULOSIS.

To attack tuberculosis as it exists at present, continues the report, "is a most difficult problem, and no single measure, however sweeping, is likely to be successful. The present wide dissemination of the disease and its prevalence among other domesticated animals, as dogs, cats, horses, and above all, its prevalence among man, makes the complete extinction of the malady an unrealistic problem. Infection through the air is the most serious problem to be dealt with. A question of such practical consequence is the effect of repeated infections. That cattle may be infected more than once is self-evident. The more frequent the infections the more rapid the disease and the speedier the danger of the one case to other animals. The fewer the tubercle bacilli in the air the more reduced the danger. It is highly probable that the cattle may, under conditions, inhale a few tubercle bacilli without permanent injury. The importance of reducing the amount of infection in a herd by all possible means and keeping it permanently reduced is one necessary condition for the successful eradication of tuberculosis."

The summarized important facts bearing on tuberculosis of the lungs in cattle are: Primary infection through the air is more frequent under existing conditions than any other mode of infection; extent and rapidity of the disease depend, at least in part, upon the number of tubercle bacilli inhaled either within short and long periods of time; tuberculosis of the lungs is not necessarily associated with any other recognizable lung affection as a pre-existing, favoring condition.

Tuberculosis of the liver is probably, in most cases, a result of a food infection. Tuberculosis of the serous membrane seems to cause least danger to the animals affected. It takes place principally by the escape of bacilli from some forms of the disease situated under one of the serous coverings, as lungs, liver, intestines and associated lymph glands.

GENERALIZED INFECTION.

It does not appear probable that organs are invaded to any extent by tuberculosis starting on their serous covering. The tubercle bacilli appear to be usually carried in lymph channels with the current. But a case of evidently retrograde movement of the bacilli has been noticed. The virus of tuberculosis does not vegetate in the blood, its presence there being accidental. In the more advanced stages of the disease infection of the blood may occur repeatedly.

Generalized infection may be recognized by the discovery of foci of disease in the organs not accessible to the virus in any other way than through the circulation or in the lymph glands of such organs. Tuberculosis of the subcutaneous lymph glands and of those situated in the muscular tissue of the trunk and limbs are universally accepted as indicative of the generalized disease. Such glands may be infected from without, but infection through wounds of the skin is quite rare. Generalized infection, both chronic and acute, has obtained considerable attention owing to its important bearing on the infectiousness of meat and milk. In all cases of generalized disease the milk should be regarded as dangerous. The difficulty from the practical standpoint lies in the recognition of the generalized infection during life. With the meat the question is simple, and resolves itself into thorough inspection of every carcass at the abattoir by a trained inspector, and with the living animal there are only a few guides, such as the condition

of the udder lymph glands or enlargement of some of the superficial lymph glands.

SEATS OF THE DISEASE.

The region of the throat and the small intestines are more likely to absorb tubercle bacilli early in life than later on, while the lungs seem to become with age the preferred seat of the disease. Demonstration of this assumption is complicated by the fact that calves are more exposed to food infection than adult animals, because of the dangers of tubercle bacilli in the milk. There is every reason to believe that most of the tuberculosis of cattle is not demonstrated at or before birth, but is contracted by contagion later on in life. Cattle owners should pay special attention to the condition of the udders, disease in which is particularly dangerous, because the milk at first appears normal for some weeks, and therefore would be used with impunity. With this disease the only danger to other herds lies in direct contact, or in the transfer of a diseased animal or of milk from such an animal. The greatest danger exists in the immediate surroundings of the infection, and loses itself as the distance increases.

In order to effectually control any infectious disease it is of the utmost importance to recognize in the living animal not only advanced stages, but even the slightest infection. It is essential that the tuberculin test be repeated no later than after an interval of six months, so as to reveal cases not detected at the first test.

The precise composition of tuberculin is unknown, but with further improvements in the means of determining its exact qualities, and the methods used to test its strength and purity, more accurate results from tuberculin injections can be expected.

GENERAL SANITARY MEASURES.

In recommending sanitary measures the report concludes:

Cattle owners should become familiar with the general nature of tuberculosis, thereby lifting themselves above the plane where quackery and specifics abound, and understand precisely what to expect after the disease has entered the herd and how to meet the demands of public health. Sanitary precautions should begin with the removal of diseased and suspected animals. Attention should be paid to the stables, and owners should look out for the inhalation disease so common in tuberculosis cattle. Each animal should have plenty of room, always occupy the same place, and be housed as little as possible. The infection of food and water should be cautioned against. Much of the difficulty which arises when radical measures for the suppression of the disease are discussed is the economic value of the cattle products—the meat and milk. The investigations show that the milk of tuberculosis animals is not so frequently infected as supposed. Milk of animals in the earlier stage of the disease and with perfect udders does not contain tubercle bacilli. Only those showing signs of labored breath and emaciation should be gravely suspected and their milk excluded at once from sale. The relative danger of the stable air to human beings is another phase of the question that should not be overlooked.

Why Pull Your Corn Fodder?

The above is the title of a bulletin (No. 104) just issued by the N. C. Agricultural Experiment Station. It treats of a very important subject and shows that there is a great loss in the present method of pulling fodder and leaving the stalks to rot in the field. Nearly one-half of the total value of the corn plant is lost by pulling fodder according to the present plan.

The simplest way to get the most food out of the corn crop is to cut close to the ground with short-handled hoes at about the time the fodder would be pulled, and cure in a silo. Lacking the silo, cut the corn in the same way a few days later, or about the time fodder is generally pulled, and shock in the field. Put 400 to 600 pounds in a shock, and stand the butts out open enough to make the shock stand firm and let in the air to dry the corn. Bind the tops tight to hold together and keep out rain.

When cured, shock out the ears, and cut what is left, known as stover, (the stalks, blades and sheaves). Cut in one-half inch lengths with ordinary hand feed cutter, or better, power if you have it. Feed to cows or work teams with cotton seed meal, wheat bran, or such other nitrogenous materials as can be most readily obtained. For nearly balanced ration, feed one pound of meal to four of stover and two of oat straw. The stover alone, fed freely, will support an animal at rest and not giving milk.

Great Falls, Mont., is rapidly growing as a wool market. Nearly 4,000,000 pounds have been marketed at that point so far this season.

It was ascertained that 74.22 per cent. of the incumberance on owned farms was incurred for the purpose of buying real estate and making improvements, and that 83.51 per cent. of the incumberance was for the purpose of buying and improving real estate, investing in business, and purchasing the more durable kinds of personal property. In the case of homes, 81.24 per cent. of the incumberance was incurred to secure purchase-money and to make improvements, and 92.86 per cent. was incurred for purchase-money, improvements, business, and the purchase of the more durable kinds of personal property.

Although the roads of Germany are the best in the world, the vehicles used there are heavy and cumbersome, while the horses are of small size and seem unequal to the task imposed upon them. This is not only true of the farm wagons, but also of the carriages used by all classes.

owned and incumbered homes, \$65,182,020. The average interest charge for one year on each owned and incumbered farm is \$87; on each home, \$80. The average rate of interest on the incumberance on the owned farms is 7.07 per cent.; on homes, 6.23 per cent.; total for farms and homes, 6.65 per cent.

In the cities of 8,000 to 100,000 population the average value of each owned and incumbered home is \$3,447; the average incumberance, \$1,363; average annual interest charge, \$86; average rate of interest, 6.29 per cent.

In the cities having at least 100,000 population \$5,555 represents the average value of each owned and incumbered home. New York has the highest value, namely, \$19,200; San Francisco is second, with \$7,993; Brooklyn third, with \$7,349; Omaha fourth, \$7,179; and Washington fifth, with \$7,054. The annual interest charge on each owned and incumbered home in these cities is \$134, the highest amount being \$438, in New York, and the lowest amount \$33, in Louisville. Denver has the highest average rate of interest on the incumberance on owned and incumbered homes, namely, 7.87 per cent., and New Orleans is second, with 7.66 per cent. New York has the lowest rate, 4.95 per cent., and Boston stands next, with 5.14 per cent.

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FARM AND HOME STATISTICS

Value of Town and Country Dwelling Properties.

The Census Office has made public the principal results of the investigation of farm and home proprietorship which was made in all of the States and Territories. This is the first investigation of the kind ever conducted for this or any other country.

Of the 12,690,152 families in the whole country, 47.80 per cent. own their farms and homes and 52.20 per cent. hire, and of the families owning their farms and homes, 27.97 per cent. have incumberances thereon and 72.03 per cent. no incumberances.

Among 100 families, on the average, 52 hire their farms and homes, 35 own free of incumberance, and 13 own subject to incumberance. The number of resident owners of land in the United States is 6,066,417, plus such a number of land owners as may be living in tenant families.

The farm families number 4,767,179, of which 65.92 per cent. own their own farms and 34.08 per cent. hire, while of the owning families, 28.22 per cent. have incumberances on their farms and 71.78 per cent. have none. In 1880, 25.56 per cent. of the farms were hired. Among 100 of farm families, on the average, 34 hire their farms, 47 own free of incumberance, and 19 own subject to incumberance.

The results for 7,992,973 home families are that 36.90 per cent. own their homes and 63.10 per cent. hire, while of the owning families, 27.70 per cent. own their homes subject to incumberance and 72.30 per cent. free. One hundred home families, on the average, contain 63 that hire their homes, 27 that own free of incumberance, and 10 that own subject to incumberance.

The cities and towns of 8,000 to 100,000 population are aggregated for the 1,749,579 home families that live in them, and of their families 35.96 per cent. own their homes and 64.04 per cent. hire, while of the owning families 34.11 per cent. own subject to incumberance, and 65.89 per cent. without incumberance. In 100 home families, on the average, 64 hire their homes, 24 own free of incumberance, and 12 own subject to incumberance.

In the cities that contain over 100,000 population, there are 1,948,834 home families, of which 22.83 per cent. own their homes and 77.17 per cent. hire, while of the owning families 37.80 per cent. own subject to incumberance, and 62.20 per cent. free of incumberance. In 100 home families in these cities, on the average, 77 hire their homes, 14 own free of incumberance, and 9 own under incumberance.

Among the cities having 100,000 population and over, New York has the highest percentage of home tenancy, namely, 93.67; Boston is next, with 81.57 per cent.; Jersey City, fourth, with 81.20 per cent.; and Cincinnati fifth, with 80.82 per cent. The percentage for Baltimore is 73.94; for Buffalo, 60.03; for Chicago, 71.24; for Cleveland, 60.90; for Denver, 70.69; for Minneapolis, 68.86; for New Orleans, 78.51; for Philadelphia, 77.24; for St. Louis, 79.53; for St. Paul, 59.80; for San Francisco, 78.46; for Washington, D. C., 74.80. The smallest percentage—56.02—represents Rochester, N. Y.

To bring the urban population into contrast with the non-urban population, totals have been obtained for 4,224,560 home families living outside of cities and towns of 8,000 people and over, and of these families, 43.78 per cent. own their homes, 56.28 per cent. hire, while of the owning families, 23.09 per cent. own with incumberance, and 76.91 per cent. own without incumberance. Among 100 of these home families, on the average 56 hire their homes, 34 own free of incumberance, and 10 subject to incumberance.

The value of the 1,696,890 farms and homes subject to incumberance is \$3,687,298,069, and the incumberance on them is \$2,132,949,563, or 57.50 per cent. of the value. The 886,957 farms subject to incumberance are worth \$3,054,923,165, and the incumberance is \$1,085,995,960, or 35.55 per cent. of the value. The 809,933 homes subject to incumberance are valued at \$2,632,375,904, and the incumberance is \$1,046,953,603, or 39.77 per cent. of the value.

The cities of 8,000 to 100,000 population have 214,613 incumbered homes, occupied by owners, worth \$739,846,087, with an incumberance amounting to \$292,611,974, which is 39.55 per cent. of the value.

In the cities of 100,000 population and over the value of the 168,159 incumbered homes occupied by owners is \$334,191,811, and these homes are incumbered for \$393,029,833, or for 42.07 per cent. of their value.

In the country outside of cities and towns of 8,000 people and over, the value of the 427,161 incumbered homes occupied by owners is \$958,337,006, and the incumberance is \$361,311,796, or 37.70 per cent. of the value.

Of the incumberance on farms and homes 22.20 per cent. bears interest at rates less than 6 per cent., 34.44 per cent. at the rate of 6 per cent., 43.36 per cent. at rates greater than 6 per cent., and 10.96 per cent. at rates greater than 8 per cent.

The average value of each owned and incumbered farm in the United States is \$3,444, of each incumbered home \$3,250, and the average incumberance on each of the farms is \$1,224, on each incumbered home \$1,293. The interest charge for one year on the incumberance on owned farms and homes is \$141,910,106; on the owned and incumbered farms, \$76,728,077; on the

owned and incumbered homes, \$65,182,020. The average interest charge for one year on each owned and incumbered farm is \$87; on each home, \$80. The average rate of interest on the incumberance on the owned farms is 7.07 per cent.; on homes, 6.23 per cent.; total for farms and homes, 6.65 per cent.

In the cities of 8,000 to 100,000 population the average value of each owned and incumbered home is \$3,447; the average incumberance, \$1,363; average annual interest charge, \$86; average rate of interest, 6.29 per cent.

In the cities having at least 100,000 population \$5,555 represents the average value of each owned and incumbered home. New York has the highest value, namely, \$19,200; San Francisco is second, with \$7,993; Brooklyn third, with \$7,349; Omaha fourth, \$7,179; and Washington fifth, with \$7,054. The annual interest charge on each owned and incumbered home in these cities is \$134, the highest amount being \$438, in New York, and the lowest amount \$33, in Louisville. Denver has the highest average rate of interest on the incumberance on owned and incumbered homes, namely, 7.87 per cent., and New Orleans is second, with 7.66 per cent. New York has the lowest rate, 4.95 per cent., and Boston stands next, with 5.14 per cent.

It was ascertained that 74.22 per cent. of the incumberance on owned farms was incurred for the purpose of buying real estate and making improvements, and that 83.51 per cent. of the incumberance was for the purpose of buying and improving real estate, investing in business, and purchasing the more durable kinds of personal property. In the case of homes, 81.24 per cent. of the incumberance was incurred to secure purchase-money and to make improvements, and 92.86 per cent. was incurred for purchase-money, improvements, business, and the purchase of the more durable kinds of personal property.

Although the roads of Germany are the best in the world, the vehicles used there are heavy and cumbersome, while the horses are of small size and seem unequal to the task imposed upon them. This is not only true of the farm wagons, but also of the carriages used by all classes.

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The Best Watch Ever Before Made for Five Times the Money, and the Best All-Round Farm Paper in America.



The House by the Roadside.

BY JULIE M. LIPPMANN.

Along the country roadside, stone on stone,
Past waving grainfields, and near broken stile,
The walls stretch onward and uneven pile,
With rankling vines and ivy overgrown.
So stand they sentinel, unchanged alone,
They're left to watch the seasons passing slow;
The Summer's bright, or the Winter's snow,
The Springtime's birding, or the Autumn's moon.

Who placed the stones now gray with many years?
And did the rough hands tire, the sore hands ache?
The eyes grow dim with all their weight of tears?
Or did the work seem light for some dear sake?
These lives are over. All their hopes and fears
Are lost, like shadows in the morning haze.

Home from School.

Now here I am in the sweet old place—
Yes, little mother, I'm here to stay;
And kiss both cheeks in the dear old way.
Just look at me hard—I'm well and strong;
Just feel my arms—they'll stand the test;
I'll go to the kitchen where I belong;
You go to the porch and rest.

Now, bear, little mother, dear little mother,
Sit under the porch and rest.

I like my teachers, I like my books;
I had my share of the pranks and fun;
But my heart came back to the sweet home
And the old folks and the old ways.
I used to think what you had for tea,
Just what you were doing, and how you were dressed;
And somehow or other it seemed to me
You didn't take half enough rest.

You say little mother, you say little mother,
I'm going to have you rest.

—Exchange.

ABOUT WOMEN.

MISS ASHLEY is the name of the
champion woman sculler of America.
She is a Norwegian by birth, but has
lived in America since her babyhood.
She has developed great strength and
skill, and thinks little of rowing 12 or 15
miles in her 27-pound shell.

MRS. LYDIA C. MULLOCK.

Middleton, Conn., has celebrated
her 100th birthday. She shows no sign
of her venerable age. Her parents came
to this country before the Revolution.
Mrs. Mullock not only takes a keen
interest in current events, but reads the
daily papers, and attends church frequently.

MISS SADIE MONROE SWIFT.

Massachusetts, has in two ways made
herself distinguished. She is the official
reporter of the Middlesex and Barnstable
terms of the Supreme Court, being the
first woman officially recognized as a
court stenographer; and this Summer
she made a bicycle record of less than
10 hours over the route from Yarmouth
to Boston, 88 miles. She is said to be
the first woman to make the run.

Book Cover.

To preserve a paper-covered book,
make a pretty cover for it in the following
way: Lay two pieces of cardboard over
the sides and then sew on a cover
of chamois skin or silk, pasting down
the first blank page at the front and
back on the inside. Tie together with
narrow ribbons or with chamois strings
ending in tiny tassels made of the skin.

Idea of a Sister on the Necessity of Cultivation.

EDITOR FARMHOUSE: It is always a good
idea for people who are going to be together
to first get acquainted, so I will introduce
myself as the wife of a Missouri farmer, one
who takes an interest in everything that
pertains to making home life bright, happy,
and useful. While I do not scorn or object to
performing the most menial service, still I do
aspire and strive for thoughts and deeds of a
higher order. I am, therefore, glad to be
able to help in any way, and I will be glad
to spend all her time cooking, washing and ironing,
to the total or partial neglect of her own
mental growth and to the disadvantage of her
children.

EDITOR FARMHOUSE: As a people, eat too much.

It is detrimental to our health, happiness and
intellect. Now, that it is the rule, rather than
the exception, for the wife and mother to be
housekeeper and cook as well, would it not
be better for us to simplify our work and use
a plain, wholesome diet on our tables? By so
doing, it would leave us more time for social
pleasure and mental cultivation, thus giving
us more ability to train our boys and girls
for better men and women; for who of us
knows but our son may be called upon to fill
the Presidential chair, or our daughter be the
mistress of the White House. While I admit
it would not be much honor, if they should
bring such as the present results upon the
people, still, I point this out to the mothers
of our land, as a warning to instill good
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FASHION'S FANCIES.

Very full capes of all sizes will still be worn.

A stylish jacket for Fall is short and double-breasted, fitting the figure closely, and has a border of pretty gray fur all around and on the wide cuffs and revers.

Enormous collars of heavy lace are worn with many gowns.

Gray serge is serviceable and a pleasant change from the long-worn blue and black.

Black velvet ribbon which has been so much used on dainty Summer gowns will also trim Winter gowns of different colors.

The sailor dress is always suitable for children until the ages of 12 or 14.

Parted hair is universally worn, and is a more womanly style than either bangs or frizzes. It is brushed smoothly on top and drawn back loosely at the sides.

Pretty waists for Fall are very full and made on tight linings. They are made of all colors and kinds of silk, with velvet collars and belts contrasting in color.

A SATISFACTORY WORK-DESS.

Shall We Continue to Follow Fashions?

EDITOR FARMHOUSE: Sometime ago I saw a letter advocating the calico wrapper for the farmer's wife. I find wrappers cumbersome to laundry. I tried blouses and shirts, but being of the unfortunate long-waisted class could never be sure of being presentable without seeking the mirror. The shirts would sag. I have found something I like. It is comfortable, easy to laundry, and becoming. The accompanying cut represents the idea.

My overdresses were cut by the shirt part of a round-collared wrapper pattern and are shirred at the waist-line. My guimpes are made full in front and drawn up at the neck on a ribbon, so no buttons are required. The collar is sewed to the back, and has little capes added in front which hold it down to the front when that is tied over it. The guimpes reach below the arms, and the sleeves, collar and guimpes make quite a dressy affair. My overdresses open in front. It is an excellent walking dress for the dewy mornings, for the skirt can be drawn up through the girdle and the hands left free. Plenty of guimpes insure cleanliness without heavy washings. Of course, a large bibbed apron is required for housework.

I wonder if there are many who feel as I do about fashion following? One of our neighbors, for the first time since her marriage, has opportunity to attend divine service regularly. She has her wedding dress in the three-year-gone-by style, which will not remodel without the addition of material. That little amount of money is needed to sustain the service she wishes to attend. I say, she must not do it. The change made, and it must be done at the expense of her own overtaxed strength. Once, a garment was worn out before a new one was considered necessary or any change made, but now it must follow the fashions set mainly by silly and extravagant persons, or the wear of the cynosure of all eyes.

A New York paper, in speaking of woman's extravagance says:

"The woman of wealth ought to spend of her abundance in every direction. Comparatively speaking, the poor are a great deal more extravagant than the rich." I know those who keep themselves fashionably arrayed, but they have more intelligent demands upon their time and strength from the little ones calling them mother. All those who find any trouble in this direction speak up. Aren't there enough of us to adopt a costume of our own? What shall we do? Go on striving to keep Dame Fashion in view, fall behind, or adopt a distinctive costume suited to our pocketbooks, tastes and intellects?—S. A. M., Rhode Island.

The Hair.

Crimping and curling is no longer going on in the matter of hair-dressing. Women are now aiming to acquire that glossy smoothness to their locks which a long time ago was considered the only respectable way to have the hair. Gentle brushing, a hundred strokes every night, will make the hair as glossy as satin, and if it is washed thoroughly in a strong sud of brown soap and clearly rinsed, every two weeks at least, it will become soft and easily managed. Very tall and wide shell combs are much worn.

FREE TO INVALID LADIES.

A lady who suffered for years with uterine troubles, displacements, leucorrhoea and other irregularities, and who had tried every kind of medical treatment, completely cured her condition by the use of a small sum of money. When the two medicines were ready for use they had only cost \$1.50, and I cannot see any difference between that and the cost of \$7 or \$8.—F. S. D., Paradise, Butte Co., Cal.

When writing mention this page.

WOMAN'S WISDOM.

Ought Women to Vote?

EDITOR FARMHOUSE: We are glad that this question is not unpopular as it was 10 or 20 years ago. That people do change their minds and adopt opinions that they once disapproved has been proved many times. All reforms meet more or less opposition, and this question, "Shall the women be allowed to vote?" is no exception. The Order of Good Templars is acknowledged to be the best Temperance organization in the world, and intelligent men tell us that the reason why this is so is because the women are allowed the same privileges as the men; they are considered their equals in every respect—are eligible to every office in the Order, and vote the same as the men.

We do not see why women should not attend town meetings as well as other places where the men and women go together. When we walk up to the ballot-box in the Lodge and deposit our ballot by the side of a man we do not feel that we are becoming demoralized or in danger of losing our womanhood. If the men are not so demoralized or disappointed old maids and women who do not live happily with their husbands care to vote," but we claim that this is not so. We do not see why happy wives and mothers should not enjoy voting for President of the United States as well as for local officers. Chief Templars in a Lodge of Good Templars. Women are just as much interested in the affairs of the Nation as the men. Why not tell the men they must not leave their home duties to go and vote?—P. M. S., Vermont.

OUR DAUGHTERS.

Their Education and Influence at Home.

EDITOR FARMHOUSE: How many of the farm mothers ever think seriously of the influence of their eldest daughters? I also include the only daughter; for even there but one influence is equal or even superior to the eldest of a number, be it two, three or more.

If she be not wisely trained, she often becomes selfish and overbearing. I have seen in some households such a usurping of authority that the mother seemed to take a secondary place.

But, on the contrary, when she is looked up to by the younger members of the family, often called by the endearing name "sister," she is second only to mother when advice is sought, a sympathizer in all her sympathies, and the mother seemed to take a secondary place.

Often times the mother is called from the home circle, by what seems to our feeble sight a mysterious Providence, while the younger members of the family are yet children. How well for all if the eldest daughter can in a measure fill her place. What a power she then becomes in the home if she can perform those duties so successfully that the home life can go smoothly on without a break except the success the change can make.

Again, what comfort the eldest daughter can be to her mother in ordinary home life. She can advise, with her share at least partially her pleasures, her recreations, or rely on her for help when household cares increase or added years bring them beyond her strength. We will assume she has been properly taught to assist "mother" in early years—what time like childhood to learn, and who so fit as a patient mother to instill in these young hearts these habits of industry. I do not insist on the mother educating the daughter, though it would be well if she could at least lay the foundation. All this would be more than the average woman should undertake, even though she were capable of it. But observation will teach us how the child is to be trained in trifling acts, like putting the meat over the fire, getting the vegetables ready, sewing on buttons, feeding the chickens, etc.; then, as years pass, added duties may be required, so these habits of industry must be created.

I cannot say, though, that I approve the plan so prevalent some years ago, of turning the eldest daughter privileges of a term or two at a distant boarding school, to the neglect of the younger ones, some of whom might develop more talent than she. The plan is not one that she might teach the others. This I think utterly a mistaken one, though my observation is confined only to the two States of New York and Maryland. For so often she marries and goes from home, the others pick up what they can get at the country school and in after years reproach their parents for not giving them a better education. I plead for the younger members of the family. Is it not our duty to give each child an equal chance so far as their talents are known, and to do our utmost to develop that special endowment which God has given? Is it not to be music, drawing, reading or sewing?—A MOTHER IN THE COUNTRY.

From a California Woman.

EDITOR FARMHOUSE: From a remote corner of the United States this letter comes to you; almost entirely across the continent. We are in the foothills of the Sierras with a westerly view of four beautiful coast ranges. One can look across the Sacramento Valley almost any Summer day and get a view of them. South of us the Buttes are always visible. We have an excellent climate, and will say right here that if anyone who is afflicted with asthma or other lung trouble, or who is a sufferer from this can be found for them. I never knew but three cases here; two are well and cannot say too much for the place; in the third case the patient was so much better that he went East to sell his place, but could not do so in less than a year, and died just before he crossed the "Rockies."

Our little village has a graded school (90 scholars), a church, store, and two "country" hotels. Here a doctor who would combine farm or olive culture with his practice could make a good living, as there is a vast mining region north of us, and one must go 14 miles south to get a doctor. Of course accidents will happen, and some will get sick in the healthiest locality.

All kinds of fruit do well here, prunes, olives and pears especially, as well as small fruits and berries. Nut-bearing trees also are a success here. As this is required to be interesting to women, I will say that women here raise chickens and ducks to make their spending money. They do not get a good price, as well as eggs; there is more profit in ducks, as they are ready for market when 10 weeks old and bring 50 cents apiece, or \$5 a dozen.

This year I intend to put some fruit in glass jars and send it to some of our Northwestern cities, to think if they will like it. It does many women could find employment in Butte County.

I wonder how many who may chance to see this ever saw oranges growing. None grow here, but last week I went to visit a friend who lives in the hands of an orange grove. It is a beautiful sight to see the acres of green and yellow. One rides for miles and says, truly, this is the "Golden West."

Sisters, if you are interested in fancy work, don't read this, for with all my housework and a little boy to get but little time for anything of the kind. Not long since I saw a wool matting for cheapness and durability "took my eye." The parties raise a few fine goats, but not enough to pay for shipping, so they had the wool cleaned and carded for a small sum. When the two mattings were ready for use they had only cost \$1.50, and I cannot see any difference between that and the cost of \$7 or \$8.—F. S. D., Paradise, Butte Co., Cal.

FREE TO INVALID LADIES.

A lady who suffered for years with uterine troubles, displacements, leucorrhoea and other irregularities, and who had tried every kind of medical treatment, completely cured her condition by the use of a small sum of money. When the two medicines were ready for use they had only cost \$1.50, and I cannot see any difference between that and the cost of \$7 or \$8.—F. S. D., Paradise, Butte Co., Cal.

When writing mention this page.

A VACATION.

Two Ways of Doing.

The farmer's daughter has had a vacation. In that breathing spell that comes after all the picking, packing, the empty can filled with fruit, the jelly, marmalade, catsup and preserves made, the farmer's daughter packed her trunk, kicked off the household shackles, and sped away as fast as steam could carry her. She felt no twangs of conscience in thus leaving her post of duty, for if the bookkeeper, banker, merchant and school teacher need an annual vacation, why, so does the housekeeper. She settled herself comfortably in the car seat and looked out on the fleeing landscape, resolutely trying to keep her thoughts from the home she had just deserted. Despite her resolution she soon found herself wondering if Maggie would not forget to feed the brindle calf and drive the turkeys home to roost. To guard against such fears she deliberately went to work to study her fellow-passengers. It was an interesting study. In the seat directly in front of hers there was a mother with her half dozen tired, saucy children. Just to watch them was a pleasure unequalled by anything outside of Barnum's circus. Then there was the inevitable starchy bride and groom and the dainty young girl, ready and willing to flirt with any dithyrambic object she chanced to meet.

With such attractions before the eyes of the farmer's daughter, the five hours soon passed and she was at her journey's end. As she stepped out of the car she felt a twang of conscience, for she had just left her post of duty. She felt a twang of conscience, for she had just left her post of duty. She felt a twang of conscience, for she had just left her post of duty.

Now, that Union, to punish her for daring to have a mind of her own, drew up resolutions, wherein they said she, a Christian woman, had failed to avail herself of an opportunity to vote for temperance, and thus made them a butt of ridicule, etc., and asked her to resign.

Now, what think you, Mr. Editor? Did she hurt the cause of temperance, or detract from their influence as a temperance organization? Please reply through the columns of your paper.—Mrs. R. A. GRENELL, Erie County, N. Y.

The problem shows forth our present crude and primary state. That one woman should prescribe to her sisters their way of voting, is bossism in its worst form, and one of the most objectionable features of men's methods. As a paper, we take no voice in politics, but it seems to us that the President was right, and that she did not hurt the cause of temperance. To censure her is a violation of the theory of Government, that in local matters party lines shall not be drawn, and it is also a contradiction of the claim made by the W. C. T. U., to non-partisanship.—EDITOR.

Fall Hat.

A neat little Fall hat has roses of either velvet or ribbon at the sides, and

is still a great hit.

White Aprons.

No matter how plain or homely her Winter school dress may be, a small girl

looks daintily if she is dressed in a clean white apron. They should be made long and full, and many have sleeves and high necks. The one shown in the picture has neither, but is very becoming and pretty.

Many Useful Hints.

EDITOR FARMHOUSE: My husband received a sample copy of THE AMERICAN FARMER a few days ago. We were very much pleased with it. Such a paper is a benefit to farmers everywhere. I for one can do nothing but pick up such a paper, where I can read letters from other women, with the different recipes and ways of practicing economy.

The way "A Sister" made a rug would be very pretty and cheap. I will give another way: Take your scraps of flannel, all kinds of worsted, and even silk—no matter if they are soiled ones, it won't show. Cut them about one-half inch wide and two inches long, all colors, and mix them up; put in all the bright colors you can find. Now take two coarse knitting needles and a ball of coarse cotton—about No. 8 will do—and put all the stitches on one needle that you can conveniently knit. Knit one stitch, take one of your scraps and lay between the needles, with a little more on the lower than the upper; knit another stitch and put the lower half of the scrap up through between the needles; knit the next stitch and take another scrap; keep on until clear across; knit back plain. Make your strips just as long and just as many as you wish, and mix them together and knit a border of plain black, red or green, or any color you wish, and put around the rug. After you get it done, clip smooth and line, and you have a lovely rug.

I think an Exchange Department will be very nice, and a great help to us. I must tell you of some drop cakes I make from a recipe found some time ago, and I know they are good. Try them. One cup of sugar, one of molasses, one of meat fryings or drippings, three eggs, one teaspoonful of salt, one teaspoonful of cinnamon, two teaspoonfuls of ginger, a little nutmeg, four cups of flour, and, lastly, one teaspoonful of soda in one-half cup of water. Beat well and drop about one-half tablespoonful on well-greased tins and bake in quick oven.

Now that it is warm weather, this is a nice way to take

Pack down with just enough salt to season well. Take one pound of brown sugar, seven ounces of salt, put in 14 quarts of soft water, and let it stand until it almost boils, take off, and when cold pour over the beef.—FARMER'S WIFE, Iowa.

A PROBLEM.

For Interested Suffragists.

EDITOR FARMHOUSE: Perhaps some of your readers are W. C. T. U. women, and if so, I have a problem for them, to which I hope they will all send me reply through your valuable paper—for we consider it a treasure.

We have a Union in our town which has been popular and very prosperous, and the suffrage question has troubled us exceedingly. The first time women were allowed to vote in New York, and that only on education, our Union drilled for it, so as to be sure and make no mistake about such a weighty matter. One woman gave them instructions whom to vote for, and distributed her posters and enjoined them to get as many votes as possible for Mrs. House, the Prohibition candidate.

Now, the President of that Union was a little stubborn, and thought she had a mind of her own, and knew for whom she wanted to vote, and so had the audacity to vote for a man; only think of it, and he on the Democratic ticket! He



UNCLE THAN'S OBITUARY.

Up a better obituary than that myself without half trying.

"Hold on, mar; I'm comin' to that," replied Uncle Than, "don't be in such an all-fired hurry. An obituary is a thing ye've got to go kinder slow with. It's more fittin'."

"Nathaniel was born in Brattleborough, Vermont, in 1817," he read on.

"Wasn't nuthin' of the kind," answered Aunt Alciny, "twas 1815. Tryin' to make yerself out younger 'n ye be, I see."

"That's so," rejoined her husband nervously. "I don't see how I come to make such a mistake."

"At the tender age of nine, deceased removed with his parents," continued the "deceased," to New York State, and after various changes settled in Durkney Point, then a howling wilderness."

"Howling!" ejaculated Aunt Alciny; "I'd like to know! What howled?"

"Wildcats, mar," suggested Uncle Than, nervously.

"Wildcats don't howl," said his wife contemptuously; "they yowl."

"Wall—yowl," repeated Uncle Than, rather impatiently. "I don't know as there's any great difference."

"Than!" said Aunt Alciny, waving her pipe emphatically, "have it right. Ef ye're bound to have an obituary, don't for massy's sakes have any howling wild cats in it fer folks to laugh at."

"When deceased was twenty he wooed and wed Alciny Griggs."

"Wooded!" said Aunt Alciny, with infinite scorn. "Wooded! Where'd she get such a silly word? Sparked is good enough fer folks like us."

"I'll change it, mar, ef ye'd like it better," said Uncle Than, eager to propitiate his critic.

"Wal, I should think ye'd better. Wooded!" Aunt Alciny gave vent to one of her most disdainful snorts.

Uncle Than read on to the close of his life and followed with great relish the details of his taking off. He hesitated over "the stroke" which killed him.

"It might be a stroke," he said, "an' then again it might be rheumatiz or consumption, mar, or fits."

"Twon't never be no consumption, Than!" with them lungs of yours," stated his wife; "more likely a stroke."

"Wall, that can be fixed up afterwards," rejoined Uncle Than; "an' now, mar," he added, after going over the description of his funeral and the list of his pall bearers, an item he had quite insisted upon, although Sophia had suggested that he might possibly outlive them all, "now, mar, I call that a mighty good obituary, don't you?"

"No, I don't," said Aunt Alciny, tartly. "I shouldn't have said nuthin' bout your donations to the church—look like braggin' too much—an' there wa'n't no need of bringin' in that law suit agin Tom Beebe—an'—"

"Now see here, mar," said the "deceased," suddenly rising and speaking with unwonted firmness, "whose obituary is this? When you have your'n composed, you can have what you want; but—"

"Me?" echoed Aunt Alciny, shrilly. "I ain't such a plagued fool as to have no obituary wrote. No sir; one idiot's enough fer the family." With this parting shot she returned to her pipe.

The obituary was carefully folded and laid away with Uncle Than's mortgage and notes in the old-fashioned secretary. But it was often stealthily brought forth and pored over by its subject, who fancied that his wife did not notice the act. But Aunt Alciny's eyes were watchful and nothing escaped her. Moreover, she remarked that her husband was changed since the obituary was written. He had assumed an air of importance, strangely at variance with his former humble mien. He paid more attention to his dress, brushed his thin hair often, and took to wearing his best Sunday coat on week-days. He expended money—he who had always been so frugal, even penurious. Instead of smoking at home he flaunted his pipe along the highway. On several occasions he swore alarmingly and conducted himself in general like a very depraved and gay old boy, instead of an estimable citizen and an upright pillar of the church.

"It's a judgment," murmured Aunt Alciny, "come on account of his vain glory. He's got so set up since that air obituary was writ, there ain't no livin' with him. He's growin' so dresy an' sassy I dunno what on earth I'm goin' to do."

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"She got the gift of gab," said Miss Priscilla Dean, who, it was suspected, cherished envy, hatred, malice and all uncharitableness toward Sophia for the sake of those three devoted husbands, "an' thar hain't no one that can address the throne of grace an' give the Lord more news in 15 minutes than Sophi' Sweezy kin."

This woman of parts set speedily to work on Uncle Than's obituary. The good man eagerly supplied the necessary data and information, and awaited the result with ill-concealed anxiety. One evening as he sat enjoying his pipe after the chores were finished, he suspended puffing for a moment to murmur: "I do wonder, mar, how Sophi' Sweezy is a-gettin' on with that air obituary of mine."

As a rule Aunt Alciny contented herself with an ejaculation—something between a sniff and a snort—which was supposed to convey contempt. One night, however, after carefully knocking the ashes from her pipe upon the hearth, she coolly remarked:

"Of all the vainglorious animals, Than!, I ever see in my life, you are the worst. Ye'd better beware. Satan is a-temptin' on yer—a tryin' on ye. Ye're a gittin' puffed up with a sense of importance. Ye're a gittin' to feel big—and I blame it all on that obituary. I wish the plagued thing had never entered your head. But I wash my hands of it. Ef any judgment overtakes ye, don't expect no sympathy from me, for it'll be along of that obituary you an' Sophi' Sweezy are a-cookin' up betwixt ye."

THE ENIGMA.

[For the leisure hour of readers, old and young. All are invited to contribute original puzzles and send solutions to those published. Answers and names of solvers to this issue will appear in two months. An asterisk (*) after a definition signifies that the word is obsolete. Address letters for this department: "Puzzle Editor," AMERICAN FARMER, 1729 New York Ave., Washington, D. C.]

ENUCLEATIONS.—NO. 4.

28.—1. Ride-seat. 28.—Through-out. 29.—1. Ride-seat. 29.—Through-out. 30.—1. Ride-seat. 30.—Through-out. 31.—1. Ride-seat. 31.—Through-out. 32.—1. Ride-seat. 32.—Through-out. 33.—1. Ride-seat. 33.—Through-out. 34.—1. Ride-seat. 34.—Through-out. 35.—1. Ride-seat. 35.—Through-out. 36.—1. Ride-seat. 36.—Through-out. 37.—1. Ride-seat. 37.—Through-out. 38.—1. Ride-seat. 38.—Through-out. 39.—1. Ride-seat. 39.—Through-out. 40.—1. Ride-seat. 40.—Through-out. 41.—1. Ride-seat. 41.—Through-out. 42.—1. Ride-seat. 42.—Through-out. 43.—1. Ride-seat. 43.—Through-out. 44.—1. Ride-seat. 44.—Through-out. 45.—1. Ride-seat. 45.—Through-out. 46.—1. Ride-seat. 46.—Through-out. 47.—1. Ride-seat. 47.—Through-out. 48.—1. Ride-seat. 48.—Through-out. 49.—1. Ride-seat. 49.—Through-out. 50.—1. Ride-seat. 50.—Through-out. 51.—1. Ride-seat. 51.—Through-out. 52.—1. Ride-seat. 52.—Through-out. 53.—1. Ride-seat. 53.—Through-out. 54.—1. Ride-seat. 54.—Through-out. 55.—1. Ride-seat. 55.—Through-out. 56.—1. Ride-seat. 56.—Through-out. 57.—1. Ride-seat. 57.—Through-out. 58.—1. Ride-seat. 58.—Through-out. 59.—1. Ride-seat. 59.—Through-out. 60.—1. Ride-seat. 60.—Through-out. 61.—1. Ride-seat. 61.—Through-out. 62.—1. Ride-seat. 62.—Through-out. 63.—1. Ride-seat. 63.—Through-out. 64.—1. Ride-seat. 64.—Through-out. 65.—1. Ride-seat. 65.—Through-out. 66.—1. Ride-seat. 66.—Through-out. 67.—1. Ride-seat. 67.—Through-out. 68.—1. Ride-seat. 68.—Through-out. 69.—1. Ride-seat. 69.—Through-out. 70.—1. Ride-seat. 70.—Through-out. 71.—1. Ride-seat. 71.—Through-out. 72.—1. Ride-seat. 72.—Through-out. 73.—1. Ride-seat. 73.—Through-out. 74.—1. Ride-seat. 74.—Through-out. 75.—1. Ride-seat. 75.—Through-out. 76.—1. Ride-seat. 76.—Through-out. 77.—1. Ride-seat. 77.—Through-out. 78.—1. Ride-seat. 78.—Through-out. 79.—1. Ride-seat. 79.—Through-out. 80.—1. Ride-seat. 80.—Through-out. 81.—1. Ride-seat. 81.—Through-out. 82.—1. Ride-seat. 82.—Through-out. 83.—1. Ride-seat. 83.—Through-out. 84.—1. Ride-seat. 84.—Through-out. 85.—1. Ride-seat. 85.—Through-out. 86.—1. Ride-seat. 86.—Through-out. 87.—1. Ride-seat. 87.—Through-out. 88.—1. Ride-seat. 88.—Through-out. 89.—1. Ride-seat. 89.—Through-out. 90.—1. Ride-seat. 90.—Through-out. 91.—1. Ride-seat. 91.—Through-out. 92.—1. Ride-seat. 92.—Through-out. 93.—1. Ride-seat. 93.—Through-out. 94.—1. Ride-seat. 94.—Through-out. 95.—1. Ride-seat. 95.—Through-out. 96.—1. Ride-seat. 96.—Through-out. 97.—1. Ride-seat. 97.—Through-out. 98.—1. Ride-seat. 98.—Through-out. 99.—1. Ride-seat. 99.—Through-out. 100.—1. Ride-seat. 100.—Through-out.

Authors: Cinders, Dan D. Lyon, Hesperus, Nympho, Nys, Prudence, St. Julian, Itami.

ENIGMANICS.

Complete Lists: G. Race, Alumnus, Guidon, J. C. M., Iron Mask, Ellsworth. 1. Ellsworth; 2. Pearl; 3. Frank P. Scott; 4. Nys.

PRIZE WINNERS.

1. Ellsworth; 2. Pearl; 3. Frank P. Scott; 4. Nys.

ENIGMANICS NO. 6.

NO. 43.—ANAGRAM.

Soliter, containing, I read ye vine of ree.

He was the cook and the captain bold, And mate of the "Nancy," brig.

The boat's tight and the midnight noise, And the crew of the Captain's gig.

NO. 44.—HALF-SQUARE.

1. Canes obtained from a species of Calamus. 2. Belonging to the tabula votiva.

(Dungl.) 3. Preparations of casein from milk, used in calico printing. 4. Remedies which attract fluids to the parts to which they are applied. (Dungl.) 5. Greek or Latin proper name. 6. A mixture of hot and cold water. (Dungl.) 7. P. O., Dutchess Co., N. Y. 8. A town of Peru. 9. Afflictions. (Murray.) 10. Is not? 11. Musical notes. 12. A letter.

NO. 45.—TRANSPOSITION.

At the tender flush of day, Winding down through camelot, With a flashing, broad array, Rides the good knight Lancelot.

Clear the bugle notes arise; The porter opens the changing two, And, winding downward from the skies, The mystic town is lost to view.

Thus my fancy TOTALS OF.

Romantic of the long ago, Ere the sages sneered and scoffed— Shot their knowledge shafts of woe. But the gilded fancy breaks, And, like the lady of Shiloh, Death and doom doth overtake.

When the rough world wears the spot!

NO. 46.—HALF-SQUARE.

1. Old Italian or Spanish dance tunes. 2. One who has an antipathy. 3. Having a small or narrow mouth. 4. A village of the island of Sardinia. 5. Extractum. (Dungl.) 6. Boats of the Philippines. (Cent.) 7. Attolment muscles. (Murray.) 8. A ghoul. 9. The capital city of Peru. 10. A verb suffix. 11. Occupied with. 12. A letter.

NO. 47.—ORIGINAL-LETTER CHANGE.

Her little hands—ah me! I loved them so!— And, like the lady of Shiloh, Death and doom doth overtake.

And gratitude for succored woe, Some creeping thing had stirred her so, And I had played the errand knight, PRIMLY with name two didst requite That I the better might her know.

NO. 48.—DIAMOND.

1. A letter. 2. English judge; 1192. 3. One of the knights of the Round Table. (Fict.) 4. A Latinist. (Cent.) 5. Bolt-heads. 6. Pertaining to the fathers of the Christian Church. 7. Mesodermis. (Dungl.) 8. Stopped, as a channel. 9. Salts of resinic acid. 10. Declamations. 11. Surfeit. 12. A cover. 13. A letter.

NO. 49.—TERMINAL AMPUTATION.

(To Iron Mask.)

Not theirs the Northland and its Gothic thought, The ghastly mounds of charnel vault and mound.

That by the peevish monks were after told; Death unto them no sombre bolings brought; A torch extinguished; fitting emblem, fraught.

ALL tender feeling, poised and deep, A passage to the gods of dream sleep! This was their verdict and they knew no more.

Two was a fated journey all must press; There were no aching pains, no carking smart;

Wreathed as Olympia's victor in his parts They pyred the spell to primal nothingness. They decked their urn with pensive tenderness.

And kept his living image in their hearts!

NO. 50.—DOUBLE DIAMOND.

Down: 1. A letter. 2. To cut off. 3. French theologian; 1631-1713. 4. Desired. 5. Gymnasiums. 6. Tending to adverb. 7. A sectary. 8. In a silly manner. * French poet; 1504-1553. 10. Macc. (Cent.) 11. A letter.

Across: 1. A letter. 2. Mixed types. 3. European measures of length. 4. Making clean. 5. Steam driven from the boiler. 6. Frustrated. 7. Establishments for the making of earthenware. 8. Am. Brig. Gen.; d. 1862. 9. The whitewashed. 10. To corrode. 11. A letter.

NO. 51.—PYRAMID.

Across: 1. A letter. 2. Memorandum. (Cent.) 3. A town of Austria. 4. European



A Domestic Discussion.

Wife—William, I do think our boys are the worst I ever saw. I'm sure they don't get it from me.

Husband (snappishly)—Well, they don't get it from me.

Wife (reflectively)—No, William; you seem to have all yours yet.—*Detroit Free Press.*

A Fair Example.

"Do you think," said the intellectual young woman, "that there is any truth in the theory that big creatures are better natured than small ones?"

"Yes," answered the young man, "I do. Look at the difference between the Jersey mosquito and the Jersey cow."—*Life.*



A City Boarder.

Dude (angrily)—How the deuce can I get over this blamed fence without bagging me two ways at the knees?

Farmer (laconically)—Take 'em off!—*Truth.*

Where He had Been.

"Hello, Biggs, you look all tired out. Been on a trip?"

"Well, I should say so. I followed the rector clear through the service without any help."

Time Working Wonders.

"B-b-boy, kick-kick-kick that cat p-p-pup off, d-d-d do you h-h-hear?"

"Dere aint no pup, Mister. 'E's growed inter a dog since yer began torkin'." Huh! Come orf Boneyes.—*New York Recorder.*

Her Brilliancy.

May—Are you still calling on Nellie Update?

Brother Jack—Yes, she's a very bright girl.

May—She must be; I hear you don't need a light in the parlor when you and she are there.

Mistaken Charity.

Farmer Outbin—I put down \$5 to-day for a pipe-organ for the new church.

Mrs. Outbin—Land sakes, what was you thinkin' of? It was only last Sunday we had a sermon on the evils of smokin'.

During the Campaign.

A man is lingering at the gate—Some tramp or burglar, maybe; Oh, no, he is a candidate—He wants to kiss the baby.

A Brunet's Advantage.

Lottie—I wouldn't be a brunet like you!

Dottie (who has an older sister)—Pooh! I wouldn't be a blonde like you, 'cause you couldn't be a brunet, but I can be a blonde any time I want to!—*Life.*

Had the Fun.

Full Blown Rose—What a pity, dear, you are engaged so young! You will never have the fun of refusing a man.

Bud—No, but I've had the fun of accepting one.

A Greater Proof.

She—I don't believe you think half so much of me as Tom Dinsley does. He tells me he could die for me.

He—That's nothing. I love you well enough to live with you.—*Boston Transcript.*

Hence These Tears.

"What is that man, father?"

"That, my son, is a Congressman."

"What makes him look so sad?"

"He has been telling his constituents that the new Tariff Bill was the best thing in the world, and now the afore-said constituents are wanting to know why a Democratic President refused to sign the best thing on earth."

Free America.

Lord Tuffnut—It seems to be a very arbitrary law of yours that a man must be born in the United States in order to become a President.

Mr. Barnes (of New York)—Yes. But we have still another more exacting. Lord Tuffnut—Dear me! What is it?

Mr. Barnes (of New York)—A man must be born in Ireland in order to become a policeman.—*Life.*

THE DAIRY.

Skimmings.

The dairy pays better in Winter than in Summer.

Fodder to keep a cow can be grown at not more than one-fifth the cost of pasture.

Each year the United States and Canada ship to England 2,500,000 boxes of cheese. This amount is only about one-third the quantity made in England.

Prof. Henry, of the Wisconsin University, estimates that a shrinkage of from 30 to 50 per cent. in the dairy products of the State was caused by the recent drought.

By good management one cow can be kept the year round on the product of an acre of ground, but no management can make less than four acres of pasture support one cow.

When Canada started to make cheese she sent to the United States for cheese-makers. Now the Canadian cheese sells for from one-half to one cent more than that made in the State of New York.

Mangels alone will not make butter; they are too watery, and this notwithstanding the belief of some persons that the food has nothing to do with the product of the butter. Some grain food should be given with the mangels, and as much of this as the cow will consume and turn into butter may be given. The varieties of mangels commonly grown are the large red and yellow globe; with good culture they yield from 25 to 30 tons per acre. The land for these roots should be plowed in the Fall.

Dairymen should wake up to the value of mangels and beets as feeds. These roots are free from the objectionable odor of the turnip family. They are really cheaper than ensilage, and better than this food for making milk, for they have no ill effect on it, as is alleged of silage, and this allegation may be considered justified by the conduct of the milk condensers, who wholly refuse the milk made from silage-fed cows. The roots are kept in perfect condition in cheaply-made pits until June, when the fresh, green feed is ready.

The Best Roots for Cows.

The best kinds of roots for feeding cows are those that have no strong taste or smell, such as carrots, mangels, beets, and parsnips. Turnips of all kinds are to be avoided as food for cows giving milk, although by the exercise of care in feeding them the ill effect on the milk may be prevented. This is done by feeding them immediately after milking; then the odor will pass off through the cow's skin before the next milking. But as there are so many better roots, and most of them will yield more than any kind of turnip will, it is better to grow these than the turnips. Sugar beets are the most nutritious of all the roots, as they have 12 or more per cent. of sugar in them, and an acre of good land will yield 12 to 20 tons of them. But no kind of roots alone will make good milk, as they contain so much water, having from 80 to 90 per cent. of it in them. Their chief value, however, for feeding is in this water, as it helps in the digestion of other food, as well as makes the whole of the substance of the roots themselves digestible. With a peck of cut roots given to a cow twice a day there should be five to 10 pounds of corn, peas, or oatmeal, with bran occasionally in place of half the meal.

Grading of Butter.

The commission merchants of Minneapolis have adopted the following classification and rules governing the sales of butter:

CLASSIFICATION

Creamery.
Creamery imitation.
Dairy tubs.
Ladies tubs.
Ladies firkins.
Grease butter.

The qualities and conditions necessary to constitute the different grades are set forth in the annexed explanations:

Extras—Shall be composed of the highest grade of butter under the different classifications mentioned in the call, and up to the following standard:

Flavor—Must be quick and perfect, if fresh made, and fine if held.

Body—Must be perfect and uniform.

Color—Good for the season when made, even and uniform.

Salt—Properly salted, neither high nor low.

Package—Good and uniform.

Firsts—Shall be a grade just below extras, and must be fine butter, in the class and grade in which it is offered.

Flavor—Must be fine.

Body—Good and uniform.

Color—Good for the season when made, even and uniform.

Salt—Properly salted, neither high nor low.

Package—Good and uniform.

Seconds—Shall be a grade just below firsts and must be fine for the class and grade in which it is offered.

Flavor—Must be good and clean.

Body—Must be good and uniform.

Color—Good for the season when made.

Salt—Properly salted, neither gritty nor flat.

Packages—Good and uniform.

Thirds—Must be good butter for the class and grade in which it is offered.

Flavor—Clean and sweet.

Body—Sound and good.

Color—Good for the season when made.

Salt—Properly salted.

Packages—Good and uniform.

Extra Dairies—Shall correspond with the different kinds of dairy butter under which they are offered.

Poor Butter—All grades below fifths, and better than grease butter. May be strong, store packed, uneven in color, and in any style of packages.

Grease Butter—Shall consist of all grades below poor butter.

Parties wishing to offer butter not described in the foregoing classifications, can specify the character of the butter in making the offer.

Known Marks—Known marks shall comprise such marks as are well known to the trade under some particular designation or mark, and shall be of such quality as those familiar with the mark generally understand it to be in the season in which it is offered.

Packages—Must be sound, with full number of hoops, covers tight, and properly fastened, or made so at seller's expense unless otherwise stipulated at time of sale.

Making Butter Through the Heated Term.

EDITOR AMERICAN FARMER: With your permission I will tell the farmer housewives how one woman makes good butter when the thermometer ranges among the nineties.

An exceptionally good milk cellar became heated and close, and consequently the butter when churned was soft and salty, and by no process could it be hardened. In this dilemma I had an entire window removed from my pantry, which is on the north side of the house, and a screen tacked on from the outside, so in case of rain the sashes could be quickly fitted in. I then removed my milk from the cellar to the pantry. The prospects for making good butter are now greatly improved, from the reason that the pantry is cool and airy. The milk is skimmed as soon as changed, or before it becomes thick; the cream pail is kept on the bottom of the cellar and churned every other day. About six hours before churning I have the cream pail suspended in an open well, where the cream becomes very cold, probably below 60 degrees, the temperature rising a few degrees in the process of churning.

When the butter is taken from the churn it is firm and solid, and of a good color and flavor. The butter is rinsed and salted at the rate of an ounce to a pound, the moisture pressed out after standing until the next day, and then packed. In my observation I have found that if butter is soft when taken from the churn, it is apt to remain so, especially in hot weather; consequently the cream must in some way be brought to the right temperature before beginning to churn. This may be done by the use of ice, but the butter is very apt to fall back to its original soft state as soon as the atmosphere penetrates it.

Within my recollection the public taste for butter has greatly changed. I remember when farmers' wives invariably packed their butter during the entire season, and as a preservative added a trifling salt and loaf sugar to each churning before packing. In the Fall this butter was sold at a fair price.

At the present time public taste demands freshly-made butter very slightly salted. Such butter may please the palate of some, but it will not keep; it soon becomes off flavor, if not decidedly rancid. Salt is a preservative of butter, the same as of meat, notwithstanding some dairymen claim it is not. Where every condition for making good butter has been faithfully observed, unless properly salted the butter will not keep. Much of the poor stuff found in stores and sold for wagon grease may originally have been a fair quality of butter, but it spoiled for lack of salt. My practice is to season butter somewhat higher for long keeping than for immediate use, as a trifling excess of salt is less objectionable than butter off flavor. As a matter of course, those having large dairies can make a more uniform quality of butter by the use of a separator, or even a creamer, than those who do not keep cows enough to make these desirable conveniences pay. But good butter can also be made by the old process of setting milk in pans, providing we have good conveniences, and give the business a proper amount of care.—A. C. B., Meridian, N. Y.

Popular Forms for Butter.

The most convenient shape for fresh butter to be put up in, is the oblong square form, one pound in weight, divided by narrow grooved lines into three portions for cutting up for the table.

Thirty cubic inches of butter will weigh a pound, if it is made as dry as it should be, that is, with only 10 per cent. of water in it. A mold of this shape and size is easily made by any person, of some kind of wood that has no taste or odor, as maple, cut out of a solid block, and with no bottom. It is laid on a slab of similar wood, but marble is the best material for the block. A loose lid or follower made of the same kind of wood is made to fit in the mold, and may be carved with some figure or device to be used as a trade mark for the dairy. The follower has the two dividing lines cut in it to mark the divisions mentioned. It is pressed on the butter by a light lever press, by which the butter is made into a firm cake. The cakes are wrapped in parchment paper, wetted with clear brine, and then packed in boxes holding a certain number of cakes, for instance, a box 12 by 15 by 8 will hold 48 pounds, a convenient quantity for shipping. The boxes should be provided with neat brass or nickel-plated handles at each end to lift them by. This mode of putting up butter has an important and favorable result in the selling of it.

Making Reparation.

Wife (tearfully)—You have broken the promise you made me.

Husband (kissing her)—Never mind, my dear. Don't cry. I'll make you another.

Are You Hard of Hearing or Deaf? Call or send stamp for full particulars how to restore your hearing by one who was deaf for 30 years. John Gammon, Room 18, Hammond Bldg., Fourth and Vine, Cincinnati, O.

THE ORCHARD.

Cullings.

Never let suckers grow around the orchard trees.

The Colorado farmers think the fruit blight is passing away.

Now is the time to note the unfruitful portions of the vineyard.

In the East the Kieffer pear is generally considered the best for canning.

A light crop at home and a failure abroad seems to be the order of the apple yield.

Grapevines may be trimmed late in the Fall, but in northern latitudes it is best to lay them down and cover slightly.

Train trees to low heads and spreading tops, shortening the branches each year. The trees will then stand better against storms, and the sprayer will be more effective.

Fruit that is badly ripened, poor and watery, will not keep under any circumstances. The fruit should be well ripened, be sound, and be carefully handled if it is to be stored for long keeping.

With apples, in nearly all cases, as soon as the fruit will part readily from the tree it is ready to be gathered, and any delay in this is usually done at the expense of the keeping quality of the fruit.

The arrival of peaches from California has been very heavy. The quality, however, compared with Eastern fruit of the same kind, was very inferior. They do not, therefore, interfere with home market prices, as do the peaches.

Has anyone tried Japanese plums? There is an impression that they are all tender, but the Burbank, Abundance, Willard, Ogen, Satsuma, Berger and Chabot are quite hardy in the plum region of New York State.

The Concord grape is still a leader among the rarer varieties. Moore's Early is larger but not so productive. It is two weeks earlier and of better quality, and for table use is perhaps the best early grown. The Worden is much like the Concord, though earlier.

The Yellow Transparent apple has been a favorite in Minnesota. The fruit is full, medium in size, roundish-conical in form, with a smooth skin; light greenish-yellow when ripe; flesh nearly white, fine grained and tender; flavor pleasant, slightly sub-acid. Tree symmetrical grower, beginning to bear while young.

A French method of preserving grapes is to place a shoot bearing a couple of bunches of sound grapes in a bottle filled with water containing charcoal in solution, the bottles then hung along the edges of notched shelves in a dry place. It is said that if the water be renewed from time to time, the grapes will keep until April in good condition.

The rainy season is a good time for the application of stable or lot manure to the grove or orchard, where this article is used at all for this purpose, and provided always that it is supplemented with bone and potash. There is an abundance of rain to wash the soluble parts into the soil. This will start a vigorous growth in the Spring, whereas if applied in the Winter or Spring it is apt in Summer to make too luxuriant a growth.

In a recent lecture on pruning, at Germantown, Pa., the speaker said that many untaught people do not know how to prune, but think they do, and many more do not know how intelligently. On the office of roots he said there was less need of saving all the roots than most persons suppose, as nursery roots are not the feeding roots, but the new roots are. Trees grown too fast are more likely to be injured by the cold of Winter than those of more moderate growth—hence the required caution against late cultivation. Bruised ends of roots are to be all nicely trimmed off, and not set as they come from the nursery. He said it mattered not whether a root was one foot long or two feet when planted out. We think this statement needs qualifying, as an important office of roots is to hold the tree stiff against the wind, and the new roots which they send out more efficiently aid in this security.

Spraying Plums for Rot.

Horticulturist Gorman, of the Kentucky Experiment Station, says, in a recent bulletin:

On the Kentucky Experiment Station grounds several plum trees have always been badly affected with brown rot, which is a fungus parasite. Last Spring it was decided to treat one of these with Bordeaux mixture, leaving another standing beside it as a check. The former was sprayed on June 9 with Bordeaux mixture, about two and half gallons being applied to the leaves and young fruit with a knapsack sprayer. On July 5 the tree was sprayed again, about the same quantity of the mixture being applied.

The season was unfavorable for fruit of all sorts, and neither the sprayed nor the check tree bore as full crops of fruit as usual. Some rotting fruit was observed at the time of picking on both trees and a good many plums rotted and fell from both during the Summer.

On August 22 the plums were picked, and from the sprayed tree were removed 47 plums, weighing 11½ pounds; the unsprayed check tree yielded 254 plums, weighing six pounds. The difference in favor of spraying is thus about five and a half pounds in the weight of fruit. Or we may say the spraying increased the yield about 48 per cent. The mixture was made of 22 gallons of water, six and a half pounds bluestone, three and a half pounds fresh lime. The bluestone is dissolved in three or four gallons of hot water. Slack the lime and make of it a paste as thick as cream. Stir the latter into the bluestone solution and finally turn the whole into the remaining water.

THE APPLE CROP.

Necessity of Care in Packing and Shipping.

The short apple crop makes it important that all windfalls and culls should be preserved by evaporation. They will sell for good prices and are well worth saving.

This year not only is the crop light in this country, but also in England and many other of the European apple growing countries. Reports from the latter say that they have the worst apple crop in a score of years, at least. There will be very little if any surplus for market. The market demand must mostly be supplied by other countries. Many of the other European countries will have none for sale, and some will want to buy. Holland's crop is only half of a full one, and that of Germany only one-fourth. In southern France there is a good crop, but it is mostly early fruit, and will all be gone by the time Winter reaches us. Northern France has a poor crop, and this part usually sends many apples to the English market. Belgium reports a better crop, but like southern France mostly early sorts. Italy, too, will have only a light crop, and her exports, instead of being heavy like those of last year, will be very light. In all, the shortage in Winter fruit seems most pronounced.

It looks as if prices would exceed those of last year, and that we will be called on to send supplies across to Europe. One of the heaviest losses to our fruit growers every year is the careless handling and picking of the drops after they are grown, and poor management in assorting and packing. There is no gain in sticking to the old pony barrels because they are much smaller than the standard barrel and apples packed in them sell for much less.

By painstaking hand picking more bruising will be avoided than by using any number of new devices and inventions for this purpose. When baskets of apples are added to the barrel it should be shaken after each basket full. The barrels should be filled full so that when the head is forced in there will be no danger of the apples shaking. Many apples come to market with the barrels so scantily filled that the apples rattle around till they get badly bruised, and so sell for lower prices. On the other hand the barrels should not be filled so full and the apples squeezed down so forcibly that the latter will be crushed.

The name of the variety should always be marked on the face end. It is said to be as convenient to ship fruit to England in these days as to New York. There are firms in the latter city who will take charge of shipments and see that they are transferred to the steamer and properly consigned to the dealers on the other side. As soon as sales are made, the amounts are called back to the consignors and the checks are made out for the growers immediately. They will get their returns sooner than from some of the commission merchants in New York.

An expert fruit man, of 15 years' experience, has just returned to New York from a tour through that State, northern Ohio, Michigan, Missouri, Kansas, Nebraska, Iowa, and Canada, and says with reference to the crop:

"The New England States will have a good average crop, and the outlook where I have been outside is for a large yield. In no particular section west of the New England States is there a full crop, but every section in the States I visited, which has supplied Winter fruit heretofore, will supply quite largely this year. A close inspection shows this to be a season in which the fruit is found well inside the tree. The quality of the fruit is below the average, except in Missouri, Kansas, Nebraska, and Iowa. The aggregate supply will be in excess of the Fall of 1891, except as it may be changed within the next few weeks by the elements. The crop in the New England States, New York, and Michigan is fully equal to that of last year. In some sections apples have been injured by the severe drought, but late rains are bound to help them."

Fall Notes.

Gather peppers and tomatoes before frost comes. Pull a few plants and hang them under a shed away from the frost.

Keep onions from dampness. Do not pile them up in deep layers. They must be stored in a dry, cool place.

Cucumbers, pumpkins, squashes, and melons must be gathered before they are frost-ridden. Melons will finish ripening if packed in oats. Use ripe cucumbers for pickles.

The late Fall celery planted in single rows needs blanching by earthing or boarding up. Winter celery planted in the same way must now be handled to make it grow upright, and fit for storing in trench or cellar.

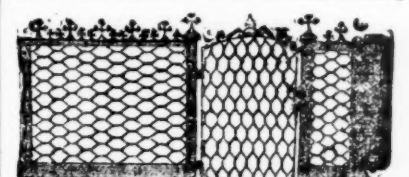
To get rid of tobacco gum after topping, suckering or working among the green crop, rub the hands with a ripe tomato and thoroughly rinse. The acid in the tomato cuts the gum.

Garden Notes.

EDITOR AMERICAN FARMER: Among the catalogues are new varieties of both vegetables and flowers, and while some of them are almost worthless, there are others well worthy a trial. One of these new acquisitions for the amateur is the new cabbage christened Succession. It is good either for extra early, Summer, Fall or Winter use, has good sized, solid heads very firm in texture, and well flavored.

The Market Gardener's best is all that is claimed for it. When sown at the same time as the Egyptian, makes a good succession, being ready to market just as the Egyptians are gone. They are all of a uniform size on good ground, turnip-shaped, dark red, very sweet and tender, and will keep tender when left in the ground, while some other varieties must be marketed as soon as large enough, or they will become tough and stringy.

Vines that grow and bloom from seed the first year should not be sown in the open ground until the first of June; when the ground becomes warm, then plant ornamental gourds, nasturtium, and thunbergia. Strawberry beginners fall with these vines on account of planting them out too early. Another time climber, but not so rampant, is the express vine and Alleghany vine or wood-fringe. These can be planted in the border.—Miss JOAN GAILLARD.



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